



PAYMENT SYSTEMS REPORT



2023

*'Remember to set an example
in everything you do.'*

King Louis I. ('The Great')



PAYMENT SYSTEMS REPORT

2023

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Pursuant to Act CXXXIX of 2013 on the Magyar Nemzeti Bank, the primary objective of Hungary's central bank is to achieve and maintain price stability. As set forth in the Act on the Magyar Nemzeti Bank, one of the main responsibilities of the Magyar Nemzeti Bank (MNB) is to promote the smooth execution of payments and to facilitate the reliable, efficient functioning of the financial market infrastructures that support this. All of this is indispensable for the performance of real economy and financial transactions.

The purpose of this Report is to present a comprehensive review of trends in the field of payments and the operation of the overseen financial market infrastructures, the main risks and the measures taken by the MNB to fulfil the responsibilities above. In publishing this report, the MNB wishes to contribute to enhancing the transparency of its activities in relation to financial market infrastructures and the execution of payments, while also endeavouring to enhance financial literacy and thus raise awareness about payment-related issues.

The analyses in this Report were prepared by the Directorate Financial Infrastructures and Payments of the MNB, under the general direction of Executive Director Lajos Bartha. The Report was approved for publication by the Financial Stability Board at its meeting on 21 June 2023. Contributors: Iván Ágoston, Beáta Csapó, Péter Császár, Vivien Deák, Mirtill Annamária Hevesi-Tóth Dr., Attila Hodován, László Kajdi, Adrián Kollár, Eszter Kozma, Miklós Luspay, Milán Mészárovcics, István Nemecksó, Cecília Pintér, Dániel Rácz, Miklós Sallai, Ádám Szepesi, Kristóf Takács, Szilveszter Tordai, Zita Ubránkovics, Lóránt Varga.

The key messages of the study as well as the Report were discussed and valuable advice on the finalisation of the document was provided at the meetings of the Financial Stability Board on 16 May 2023 and 21 June 2023, and at the Monetary Council meeting on 20 June 2023.

The MNB staff relied primarily on information relevant to 2022, although looking forward the Report also analyses ongoing developments observed in the course of 2023.

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1 Introduction

The main trends of previous years continued in electronic payments in 2022. The use of electronic payment services is expanding rapidly, supported by the increasingly frequent and wider use of innovative payment solutions as well as by the expansion in online trade. As a result, the share of electronic payments also continued to grow at a pace typical of previous years. Special mention needs to be made of the prevalence of mobile payment services; both the number of registered bank cards and the number of purchases using them increased considerably.

The payment systems continued to support the operation of the economy by high availability as well as safe and problem-free functioning. Financial market infrastructures operated in a reliable and efficient manner, in line with international standards. The liquidity available in the payment systems was sufficient during the whole year for the increased and more volatile payment turnover; by end-2022 the level of liquidity rose considerably in view of the amendments affecting the central bank toolkit.

The MNB continues to actively stimulate the development of electronic payments in order to support the efficiency and competitiveness of the economy as well as the digital transformation concerning all areas of the economy. In

2023, the central bank renewed its electronic payments strategy, and introduced a Payments Development Indicator Set to measure the achievement of the targets. According to the strategy, in the future the emphasis must be put on a targeted stimulation of use implemented jointly by the market and government players concerned. In addition, special attention needs to be paid to maintaining the low level of frauds affecting electronic payments. Therefore, the MNB announced a three-element package of measures last year. As a result of the measures supporting the development of services relying upon instant payment, further modern services may soon appear, and as the basic account becomes cheaper, a much wider clientele than before may have access to modern electronic payment services at lower costs.

Various new regulatory proposals regarding financial market infrastructures and payments are being formulated under the direction of the European Commission, which may entail adjustment tasks for domestic players as well in various areas already in the medium term. They include, inter alia, the regulation regarding the handling of instant payments in euro, the review of the rules on securities settlement, the operation of central securities depositories and central counterparties as well as on the strengthening of the cyber security of financial entities.

2 Payment service developments

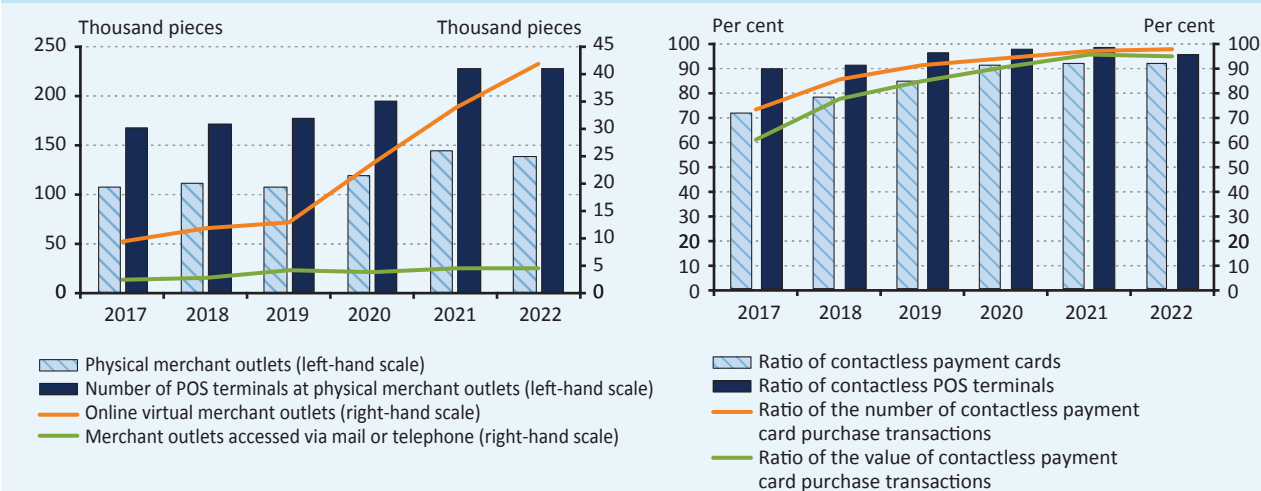
2.1 IMPROVEMENTS IN THE ELECTRONIC PAYMENT INFRASTRUCTURE

Although the coverage by banking services was already very high at end-2021, the number of bank accounts and bank cards continued to slightly increase in 2022. In 2022, the number of payment accounts managed by domestic payment service providers grew by 2.2 per cent to 10.8 million, while the number of payment cards issued by these actors was up by 1.2 per cent, reaching nearly 10 million. The number of cards used for purchase transactions in the last quarter of the year increased by 4.2 per cent, and thus already 70 per cent of the cards in circulation were actively used by customers. It is to be taken into account that the report presents the stock and flow data of the accounts managed and the cards issued by domestic payment service providers, while it does not present the data of market players providing services to domestic customers from abroad. According to the MNB's estimate, the number of these service providers' domestic customers may even exceed one million. It is important, however, that the vast majority of these service providers' customers have accounts and bank cards with domestic service providers as well, and thus the use of foreign services

typically results in parallelisms, and it does not significantly increase households' coverage by electronic payment services.

The number of virtual merchant outlets continued to increase in 2022. The provision of the Act on Trade¹ pursuant to which the merchants obliged to use online cash registers (OCRs) have to provide the possibility of electronic payment had entered into effect already in 2021, and thus no major growth was observed in the physical acceptance network in 2020 and 2021. As a result, there was no significant growth in 2022 due to the incomplete but considerable coverage. The number of acceptance points decreased by 2 per cent, while the number of operating POS terminals was practically stagnant (0.6 per cent increase). Nevertheless, the growth in the number of virtual merchant outlets continued. Their number increased by 24 per cent to 42,000. This in itself indicates the continuous expansion in online shopping. As in the previous years, the coverage by contactless card technology is practically complete; 96 per cent of the acceptance points and 93 per cent of the cards issued supported this technology. In both cases the rest is probably mainly related to various special situations, where the introduction of the technology is not possible or would entail too high development costs.

Chart 1
Development of the payment card acceptance network and the contactless card technology in Hungary



Note: The scope of data presented regarding the payment card acceptance infrastructure does not show the expansion of foreign service providers in Hungary that were not obliged to report data to the MNB until the beginning of 2021, at the same time, the number of card-acquiring merchants may be several thousands more due to the cross-border service provided by them. As a result of the expansion of reporting obligations, the MNB is having an increasingly comprehensive picture of them, although the presentation of the related data is still prevented by the lack of completeness.

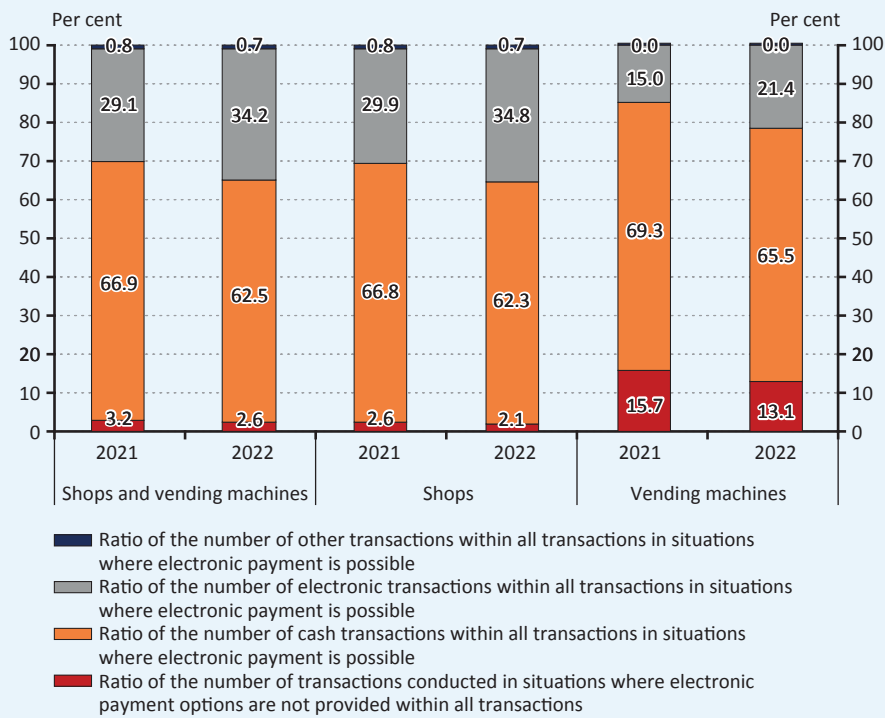
¹ Act CLXIV of 2005 on Trade

The share of electronic payments increased significantly, by 5–6 percentage points at stores and vending machines alike. Still there are stores² and vending machines that do not provide electronic payment options, but only a negligible portion of the transactions are related to them. In spite of the requirement to provide electronic payment option, 82 per cent of the vendors using online cash registers (OCRs) provide electronic payment surely, but only 2 per cent of transactions take place at points that do not allow electronic payment. 51 per cent of the merchants that are not obliged to accept electronic payment and operate only vending machines allow electronic payment,³ and 13 per cent of the transactions take place at merchants that do not provide electronic acceptance. The share of

electronic payments increased by 5 percentage points to 35 per cent at stores and by 6 percentage points to 21 per cent at vending machines.

At one quarter of stores, there are more electronic payments than cash payments. Within stores allowing electronic payment, the number of stores with the smallest ratio of electronic transactions (below 20 per cent) is declining considerably, while the number of those with a higher share of electronic transactions is increasing. While in 2021 the ratio of electronic transactions was below 50 per cent at 80 per cent of the stores, in 2022 this figure decreased to 73 per cent, i.e. at more than one quarter of the stores electronic payment is more often chosen than cash.

Chart 2
Ratio of payment methods according to the OCR database

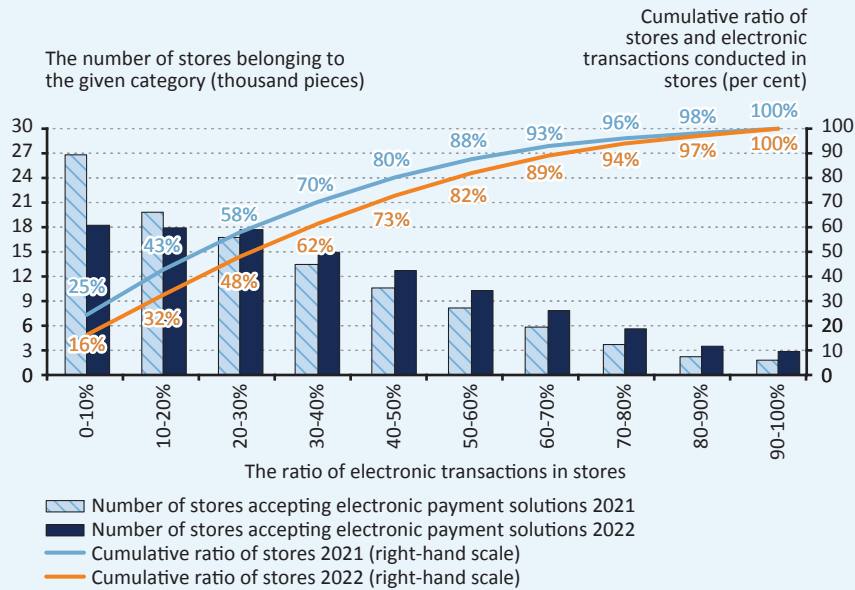


Source: NTCA online cash register database, MNB calculation

² Stores include not only the physical merchant units, but also other units, belonging to the service sector, obliged to use an online cash register (OCR) (e.g. catering units, accommodation service units, service stations, taxi). Due to the district-level OCR database, the data do not allow a definite identification of shops, and thus in the case of the analyses we examine the aggregate data by district of taxpayers' so-called retail units that have the same activities and are called stores for the sake of simplicity.

³ Note: In the case of vending machines it is not mandatory to report the modes of payment, and thus it is not possible to know of each transaction how it was paid.

Chart 3
Distribution of stores by electronic payment ratio according to the OCR database

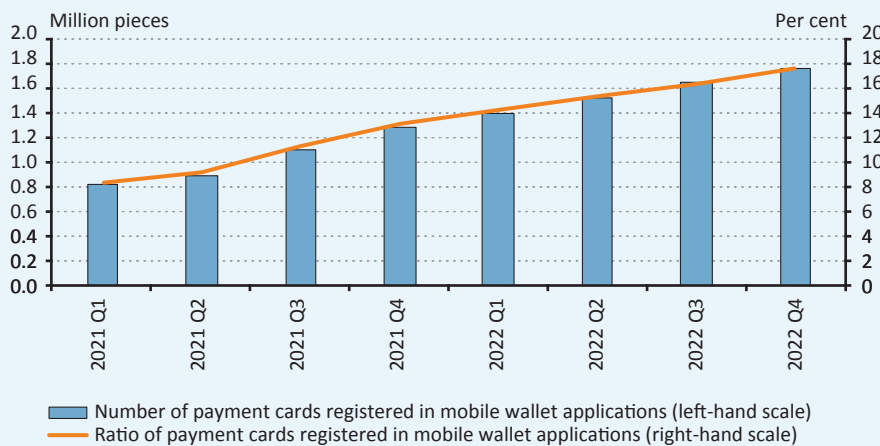


Source: NTCA, MNB calculation

The number of payment cards registered in mobile wallets increased by more than 450 thousand. The use of innovative modes of payment continued to expand in 2022 as well. One sign of this is the 37 per cent increase in the number of payment cards registered in mobile wallets, as a result of which, according to the MNB’s data, at end-2022 already 17.7 per cent of the payment cards in circulation were registered (1.7 million cards). It is also important to emphasise that

these figures only contain the data of banks’ own applications and mobile wallets independent of banks with the service providers of which domestic banks established cooperation (e.g. GooglePay, ApplePay). They do not contain the data of services provided independently by non-resident institutions. Accordingly, the number of cards used for mobile payments as well is probably higher than what is presented here, although the data shown below cover the largest actors.

Chart 4
Changes in the number and ratio of payment cards registered in mobile wallets



2.2 PENETRATION OF ELECTRONIC PAYMENTS

The spread of electronic payment transactions continued in 2022; payment card purchases already exceeded the total value of cash withdrawals. Payment card purchases, which still account for most of the electronic transactions, continued to increase during the year. Even in spite of the high base value, at the domestic payment service providers the number and value of these transactions increased by 23 per cent and 34 per cent, respectively. The penetration of electronic transactions is also indicated by the stagnating number of cash withdrawals, where a mere 1 per cent increase took place, and although their value was still 17 per cent up, it was not much higher than the rate of inflation, and fell significantly short of the growth rate of card and credit transfer turnover. Accordingly, the total value of payment card purchases (HUF 14.3 thousand billion) exceeded the value of cash withdrawals (HUF 14 thousand billion) for the first time.

For the first time, this year the value of credit transfers increased even faster than that of payment card purchases, and the use of instant credit transfers also continued to expand. Although the number of credit transfers grew by a mere 6 per cent, their value increased by 41 per cent to HUF 843 thousand billion. As a result, this year was the first when the increase in the value of credit transfers exceeded

that of payment card purchases. Meanwhile, already 42 per cent of credit transfer transactions were carried out in the instant payment system, and their value reached HUF 44.9 thousand billion. As a result, the increase in the number of instant transactions (15 per cent) significantly exceeded all credit transfer transactions, while a major rise was observed in their value as well (31 per cent). This considerable expansion may be attributable, inter alia, to the economic stimulus measures for households and companies implemented in 2022, as a result of which the disposable income increased in various social groups, which was reflected in the payment systems not only upon its disbursement but also when it was spent. In addition, various state subsidy schemes were restructured in 2022, which also may have increased the transaction turnover.

The number of online card transactions increased by 20 per cent in 2022. Within payment card transactions, the expansion is still the greatest in the case of transactions abroad, at physical merchant outlets. The number and value of such transactions increased by 69 per cent and 90 per cent, respectively, although especially the latter figure is partly attributable to exchange rate effects as well. Nevertheless, physical transactions abroad still account for a negligible portion of all payment card transactions; their share is less than 1 per cent both in terms of number and value. The growth rate of card-not-present payments, i.e. orders through the Internet, mail or telephone, is still

Chart 5
Turnover and annual change in turnover of the main payment methods

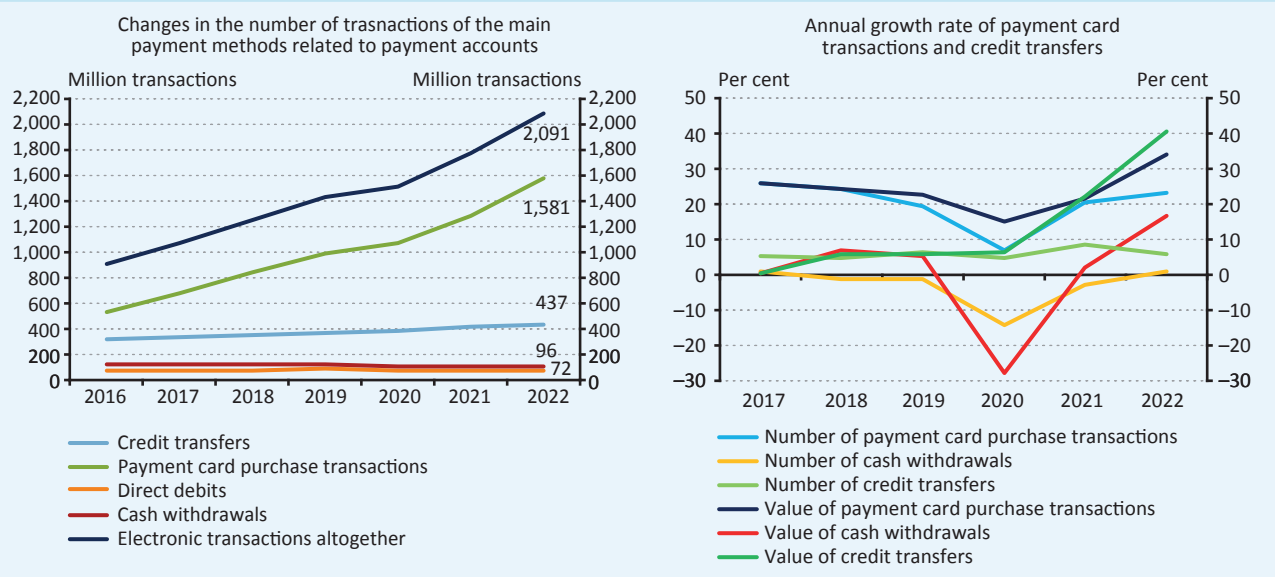
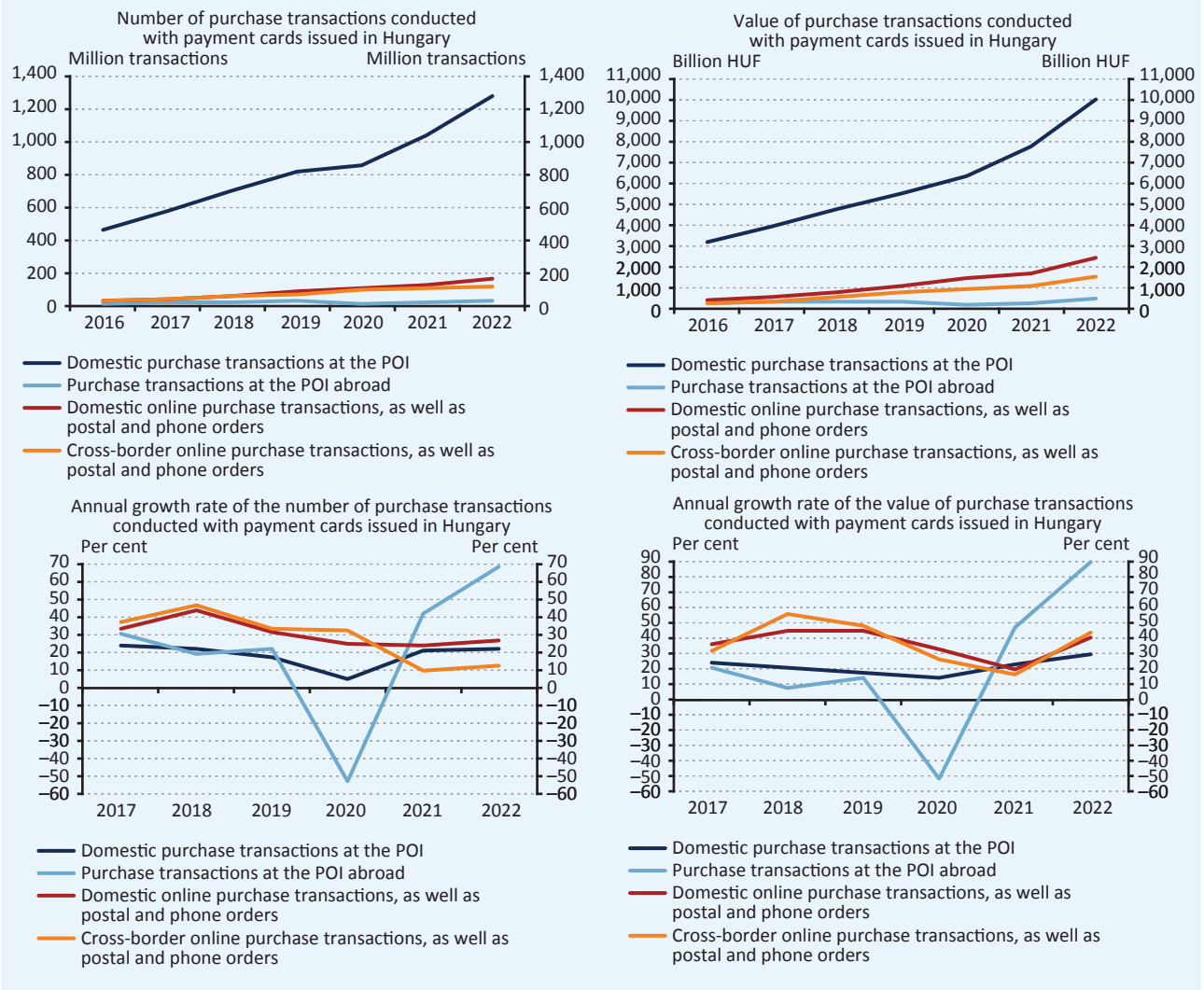


Chart 6
Turnover and annual change in turnover of payment card purchase transactions by payment situation



high: 20 per cent and 41 per cent in terms of number and value, respectively. Domestic turnover at physical merchant outlets amounted to more than HUF 12.8 thousand billion in 2022.

Both the number and value of mobile wallet purchase transactions doubled in a year. Presumably, customers who try this service usually find it advantageous, since while the number of cards registered in mobile wallets increased ‘only’ by 37 per cent, the number and value of mobile wallet transactions grew by 105 per cent and 117 per cent, respectively, year on year. As a result, mobile wallet payments already accounted for 14 per cent of the number and 10 per cent of the value of all payment card purchase transactions. Compared to the 2021 data, this

corresponds to increases of 5.8 and 3.7 percentage points, respectively.

More than one third of the number and more than half of the value of transactions in stores take place electronically⁴. The number of transactions grew by 8 per cent to 3.7 billion, but it still does not reach the pre-COVID figure. At the same time, with a 25 per cent increase, exceeding even HUF 16 thousand billion, the value of transactions is much higher than in the pre-COVID period, presumably due to the inflation. As in the previous year, the shares of both the number and value of electronic transactions increased by 5 percentage points in 2022, and thus 34 per cent of the number and 51 per cent of the value of transactions were electronic.

⁴ Including cards, Széchenyi Recreation (SZÉP) Cards, instant payment and electronic vouchers.

Chart 7
Number, value and share of mobile wallet purchase transactions

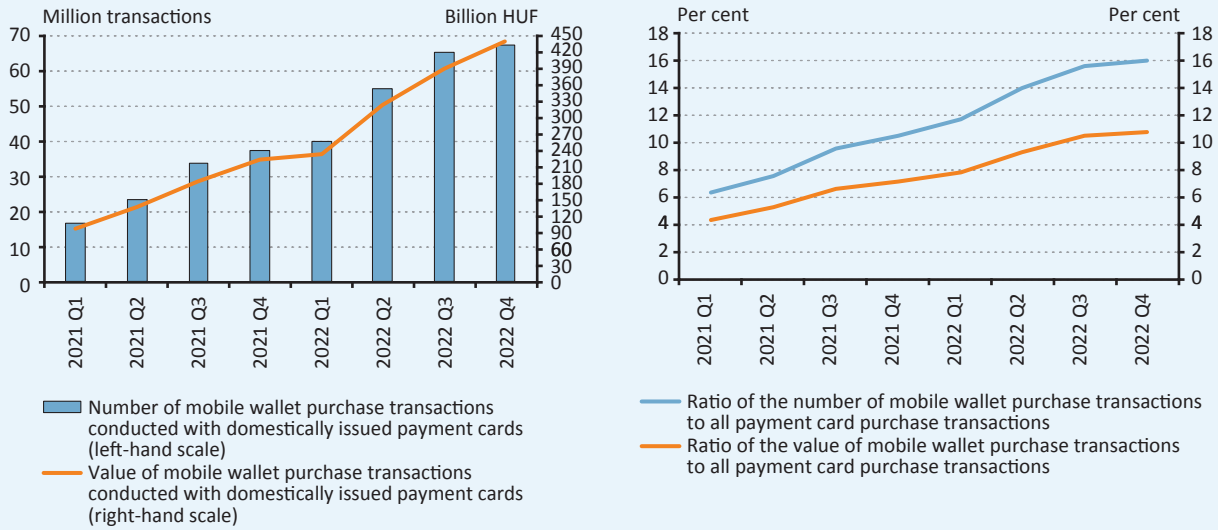
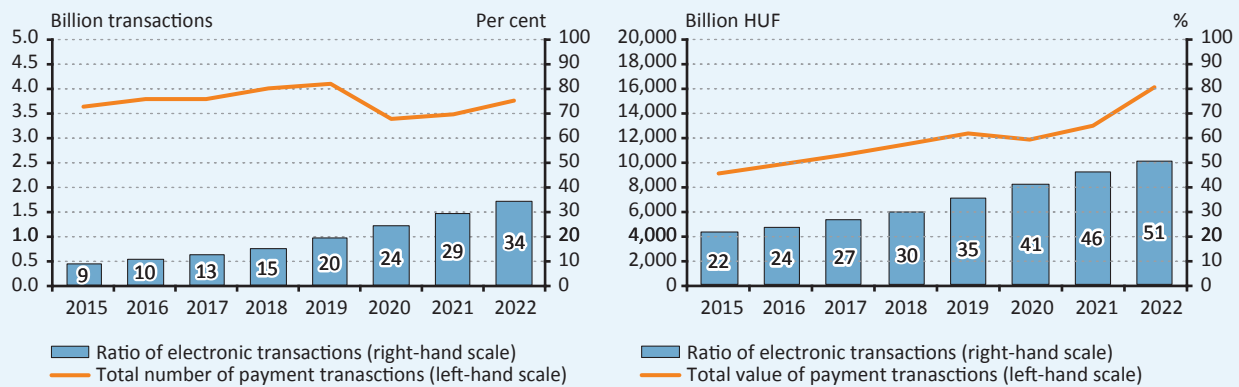


Chart 8
Number and value of transactions and share of electronic transactions in the OCR sector



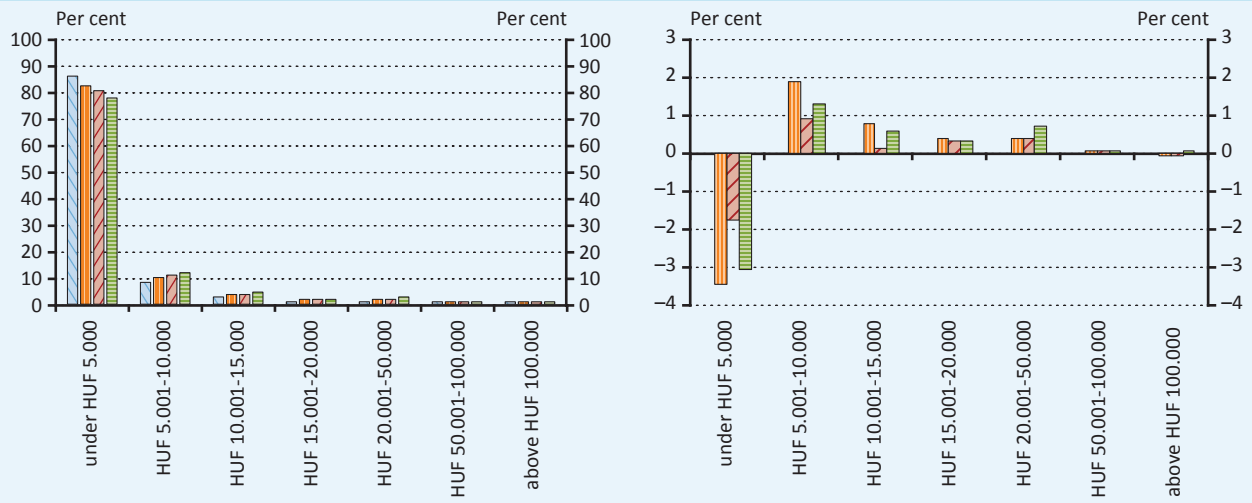
Source: NTCA online cash register database, MNB calculation

Still more than three quarters of the transactions in shops are below HUF 5000. 78 per cent, i.e. most of the retail data are low-value transactions below HUF 5,000, while 12 per cent of them are between HUF 5,000 and HUF 10,000. The underlying reason may be that several smaller transactions are typical of everyday life, such as buying a coffee or bakery products, certain 1-person meals or buying bus tickets used in public transport. Consumer basket values are increasing year by year; the degree of the increase may be affected by various events. For example, the appearance of the coronavirus pandemic reduced the share of transactions below HUF 5000 to a greater degree in 2020, whereas in

2022 this trend presumably continued primarily as a result of inflation.

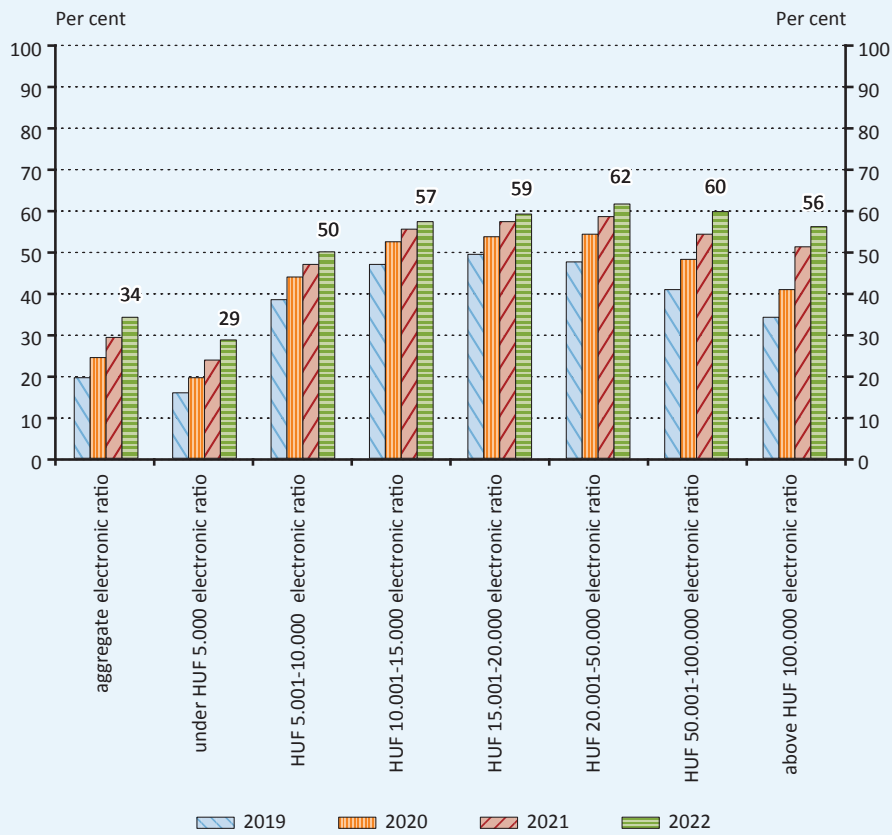
In the case of purchases above HUF 5000, there were more electronic payments than cash payments. Electronic transactions accounted for 50–62 per cent of the transactions with a value of more than HUF 5000, while below HUF 5000 this ratio was 29 per cent in 2022. As the majority of transactions are low-value ones, the share of electronic ones within all transactions is well below 50 per cent in spite of the fact that a surplus of electronic transactions is observed in the case of purchases exceeding HUF 5000.

Chart 9
The ratio of transactions in stores according to number and its change by value range



Source: NTCA online cash register database, MNB calculation

Chart 10
The ratio of the number of electronic transactions in the sectors that use online cash registers

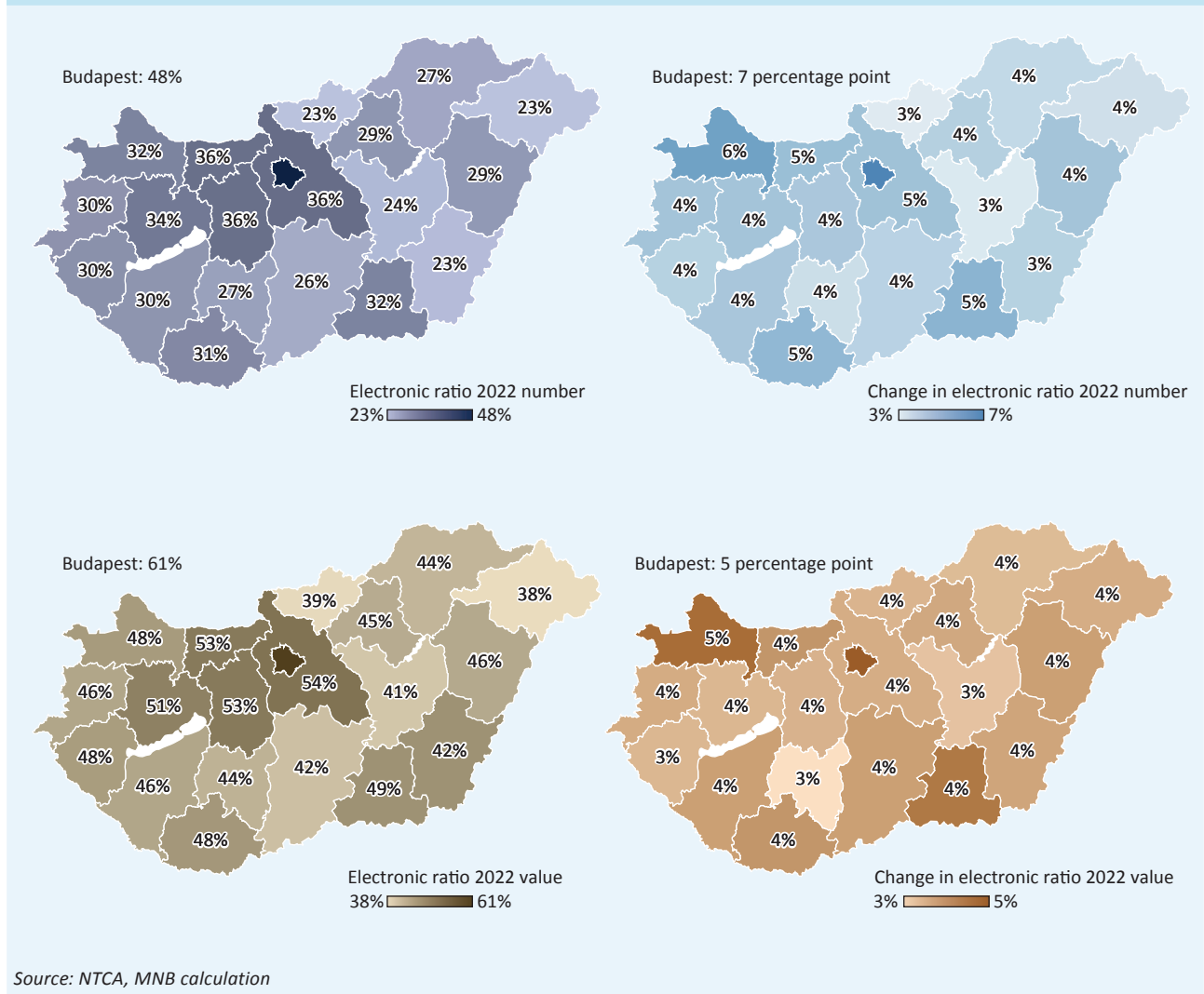


Source: NTCA, MNB calculation

Looking at the territorial distribution within the country, differences may be as big as 25 percentage points in terms of the ratios of electronic payments. Examining the counties and Budapest, there are major differences in the ratios of electronic payments. The highest shares of electronic payments are observed in Budapest, amounting

in 2022 to 48 per cent and 61 per cent in terms of number and value, respectively. The lowest values are found in Szabolcs-Szatmár-Bereg County, with 23 per cent and 38 per cent, respectively. The ratios of electronic payments grew by 3–7 percentage points in a year, with the greatest increases seen in Budapest and Győr-Moson-Sopron County.

Chart 11
Shares of electronic transactions and changes in these shares in percentage points in the OCR using sector

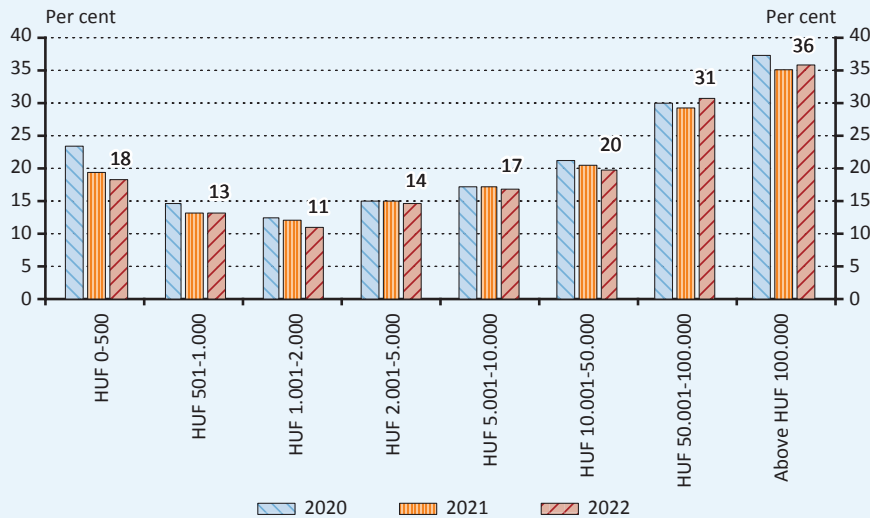


Source: NTCA, MNB calculation

In parallel with the major expansion in online trade in the past years, payments by card through the Internet also became increasingly popular. In 2022, the number of card payments through the Internet increased by 19 per cent year on year, but this major increase still falls short of the expansion in payments by card in shops. Within all card payments, the ratio of card payments through the Internet is higher in the higher value categories, although the ratio of payments in shops is still higher in all value categories. The share of the former was between 11 per cent and 36 per cent in 2022. Examining the share of payments through the

Internet within card payments it is seen that their ratio is the lowest in the case of transactions between HUF 1,001–2,000, and not in the smallest value category, i.e. below HUF 500. The ratio of Internet transactions below HUF 1000 may also be increased by the purchasing of various low-value services, such as buying of transport tickets during occasional travels. Between 2020 and 2022, in the value category below HUF 50 thousand, the share of Internet payments within card payments declined or stagnated, but above that value their ratio increased to some extent from 2021 to 2022.

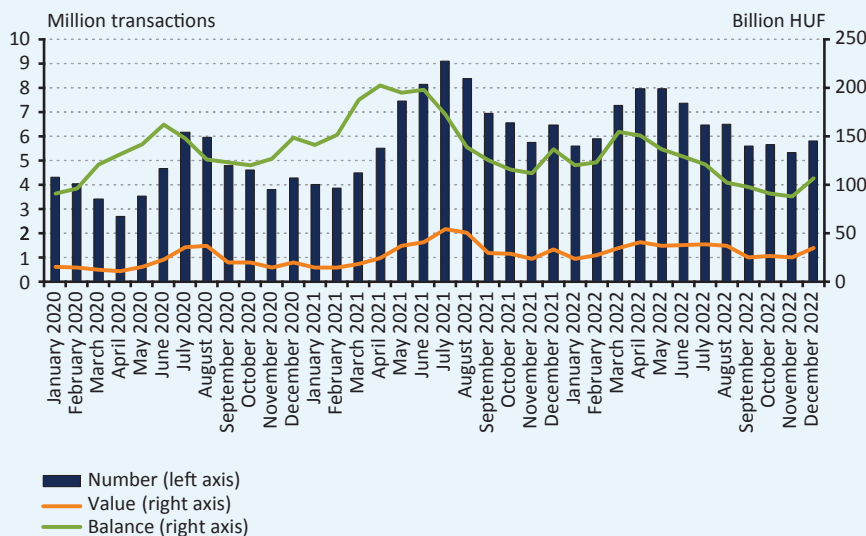
Chart 12
The share of card payments through the Internet within all payment card transactions by transaction value range



The preferential tax on SZÉP Cards, the interchangeability across their sub-accounts and the possibility of using them in retail outlets significantly increased the number of payments by SZÉP Cards in 2022 H1. Nevertheless, the number of payments by SZÉP Cards was already lower in 2022 H2 compared to the same period of the previous year. In 2022 Q1, the year-on-year increase was significant both in terms of number (50 per cent) and value (more than 80 per cent). In Q2, increases of 10 per cent and 13 per cent in terms of number and value, respectively, were observed year on year. Presumably, the underlying reasons are that the base values are low due to the pandemic, and between 1 February 2022 and 31 May 2022 it was allowed to use SZÉP Cards to buy food in shops, which resulted in

a major increase in turnover. The increase was already lower in Q2 because of the high turnover in the previous quarter. In year-on-year terms, the number of payments by SZÉP Cards declined by 25 per cent in Q3 and by 10 per cent in Q4. The underlying reasons are that probably some of the SZÉP Card holders had already spent the available amount in the previous quarters, and due to the surging costs of domestic summer holidays fewer people spent on recreation in Hungary than in the same period of the previous year. We may also come to this conclusion from the balances available on SZÉP Cards, as in September 2022 they were among the lowest in the period under review, i.e. by that time the majority of SZÉP Card holders had already spent the available funds.

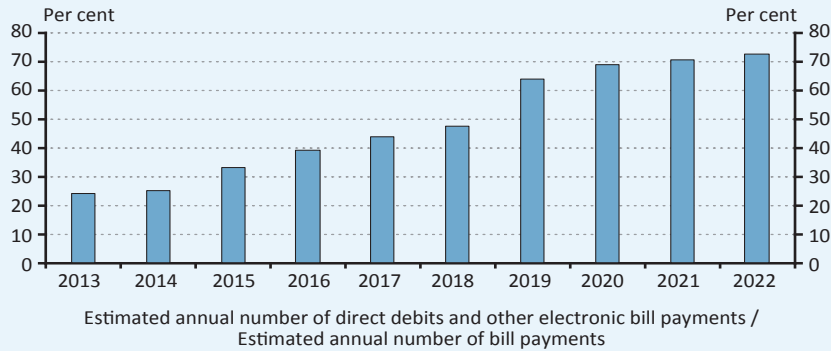
Chart 13
Number and value of payments by SZÉP Card and the available balances



The further penetration of electronic payment methods is indicated by the increase in electronic bill payments. In 2022, already 72.9 per cent of bill payments were through electronic solutions. This indicator comprises yellow and

white postal money orders paid electronically, solutions relying upon payment cards as well as direct debits and payments by bank credit transfer.

Chart 14
Electronic payment of utility bills and other service charges

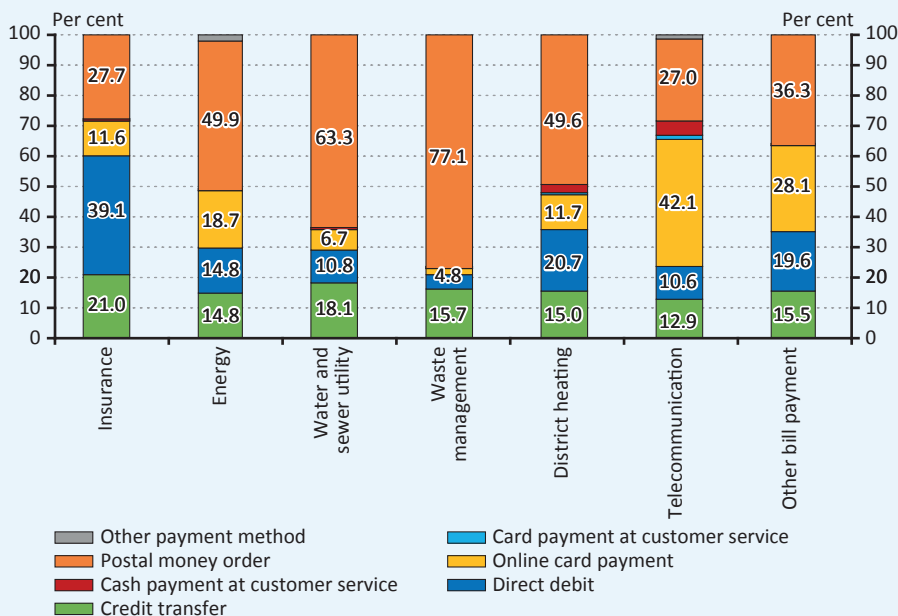


The bill payment data before 2019 do not include bill payments conducted not through postal money orders or direct debits (e.g. card payment online or in the service provider's local office, credit transfer), while the continuously increasing payments of postal money orders conducted with payment cards in the post offices have formed integral part of this indicator all the time.

In the area of bill payments, the gradual decline in the use of postal money orders and the increase in the use of electronic payment methods continued. Except for water and sewage companies, in 2022 the use of postal money orders was down in all areas, usually by 1–3 percentage points. As a result, together with the increase in the electronic payment of postal money orders (e.g. the introduction of the option to pay by card at post offices, QR code-based mobile postal money order payment service), the ratio of electronic bill payments continued to

grow. The greatest change took place in the area of waste management, although even here it only means a decrease of 2.8 percentage points in postal money orders, which is not much higher than the changes seen in other sectors. The share of electronic payments is the highest in the case of insurance companies and telecommunication service providers. As for the former, direct debit dominates mostly because of insurers' bank relations, business policies and practices of entering into contracts as well, whereas simple payment by bank card through web page or mobile

Chart 15
Modes of payment by sector in the case of bill payments



application is typical in the case of telecommunication service providers. Within electronic payments, the role of direct debit is still high, but declining. Bank credit transfer and online payment by card are gaining ground instead.

2.3 REVENUES RELATED TO PAYMENT SERVICES

In 2022, domestic players' income from payment services increased by HUF 127 billion compared to the previous year. Hungarian payment service providers realised

revenues amounting to HUF 749 billion in 2022, exceeding the previous year's figure by 20 per cent as a result of a dynamic growth in the turnover of electronic payment methods. Within the revenues, with a share of 27 per cent the largest part is still related to credit transfers, as the minimum and value-based fees directly linked to the initiation of transactions are still widespread, which does not encourage the use. (Chart 16)

Hungarian payment service providers' revenues from card acquiring increased significantly as a result of the growth in the card turnover, while smaller retailers' burdens as a proportion of turnover are still much heavier. Hungarian payment service providers' revenues from card acquiring, which represent costs on the retailers' side, significantly rose compared to 2021. The more than 40 per cent increase amounting to HUF 25 billion is primarily the result of the dynamic growth in turnover and the favourable impact of the Act on Trade on the expansion in the infrastructure. Most of the income with a total value of HUF 88 billion is still related to the merchant fees proportionate to the value of transactions. In the case of merchants whose quarterly card turnover is below HUF 1 million, the ratio of payment service providers' revenues from merchants to the card payment turnover of the merchants concerned remained almost unchanged (2.7 per cent). Accordingly, it is still expressly high, especially compared to merchants with higher turnover. In 2022, the number of merchants in the lowest turnover category declined by 9 per cent, which is presumably the result of the increased energy prices and the high inflation environment.

Chart 16
Distribution of the main categories within the revenues from payment services

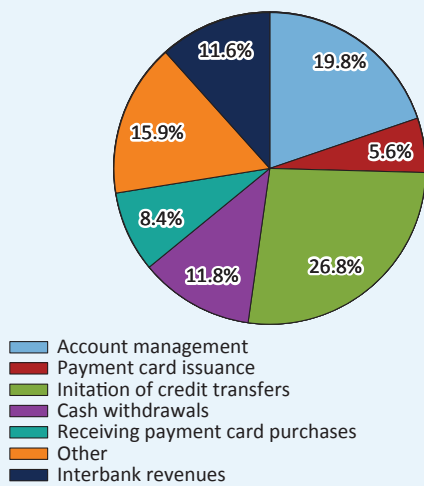
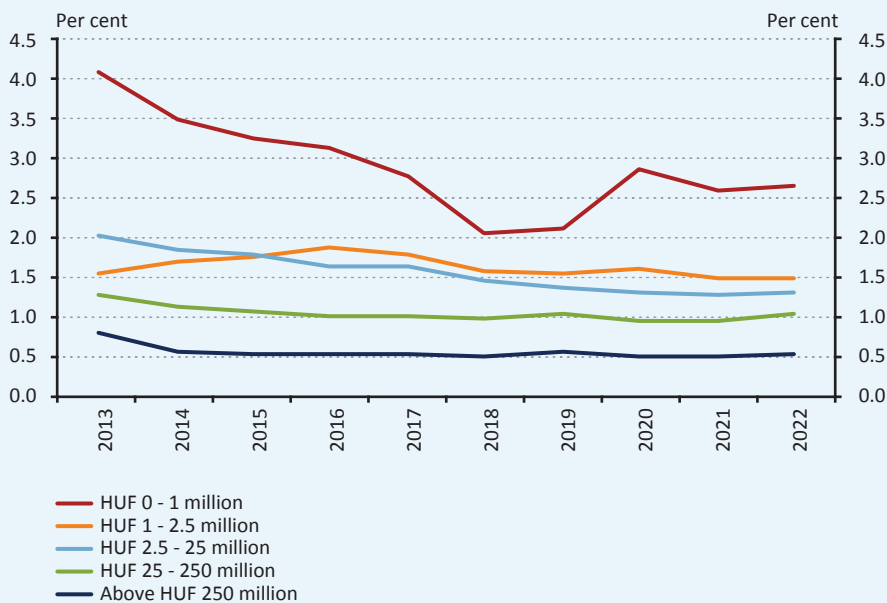


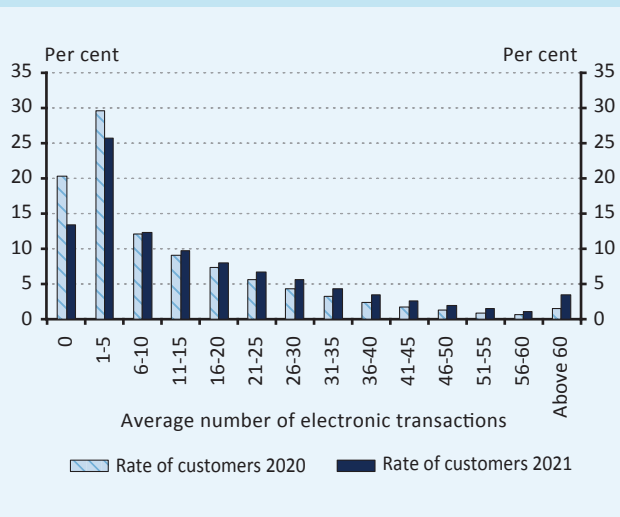
Chart 17
Card acceptance costs of card-accepting merchants as a percentage of their card turnover, by quarterly card turnover category



2.4 PRICING TRENDS AND CONSUMER HABITS

According to 2021 data, nearly 39 per cent of the customers that have a payment account can be considered electronically active, as they initiate more than 15 electronic transactions (payment by card, credit transfer, direct debit, regular credit transfer) a month. 15 electronic transactions a month means one transaction every second day, and thus these customers can be considered electronically active. Nearly as many customers conduct fewer than six electronic transactions a month. Compared to 2020, the ratio of those who pay electronically less than six times a month declined by 10 percentage points, while increase is observed in the other categories.

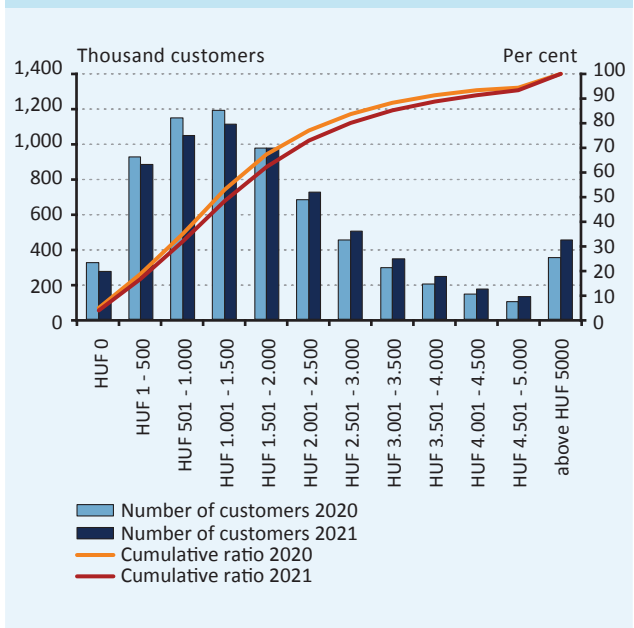
Chart 18
Average number of electronic transactions per month



The MNB’s analysis suggests that customers – including those who conduct a low number of electronic transactions for the time being – pay high monthly fees. In 2020, even with the low number of transactions, 65 per cent of customers paid more than HUF 1000 a month, and in 2021 this ratio grew to 68 per cent. The number of customers whose average monthly cost reached HUF 5000 (equalling more than HUF 60,000 a year) increased considerably, by 100 thousand, which also shows that the fees paid were up considerably.

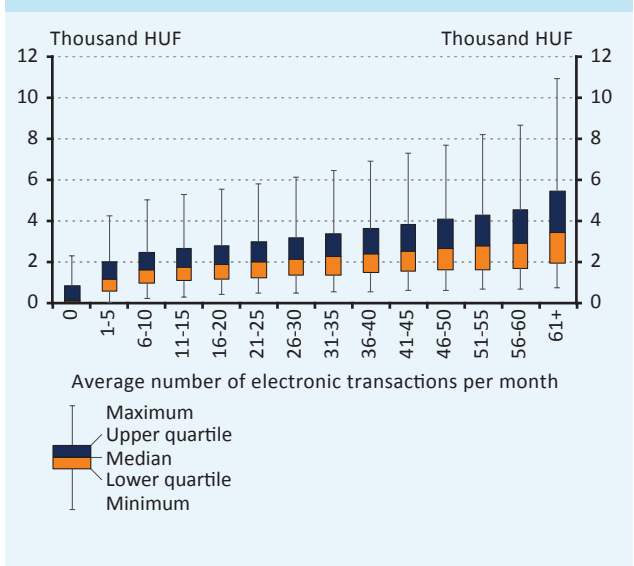
There may also be major differences between the monthly costs of customers who conduct similar numbers of electronic transactions. It is true for any

Chart 19
Number of customers in categories according to average monthly payment costs



of the groups according to the number of transactions conducted that taking the median of the groups as a base of comparison, there is at least one customer whose cost is three times higher than the median value of the group. (Chart 20).

Chart 20
Distribution of fees paid by retail customers in groups according to the number of monthly electronic transactions



On the basis of the MNB's analysis it can be established that the costs can be significantly reduced by a conscious choice of the account package and the services. Therefore, it is crucial to create transparency in pricing and inform customers adequately. Help to customers in that is provided by the annually received statements of fees, received by each customer before the end of January every year and containing a detailed breakdown of all the significant costs related to the bank account. Using this information, with the MNB's updated bank account selector programme everybody can find an account package that matches their payment habits best. Considering the continuously changing services, fees and payment habits it is worth devoting time every year to reviewing whether there are account packages or services with more favourable fees than the current ones of the customer, and if yes, it is worth switching to a new account package using the opportunity of simplified changing of bank accounts or to use cheaper substitute services.

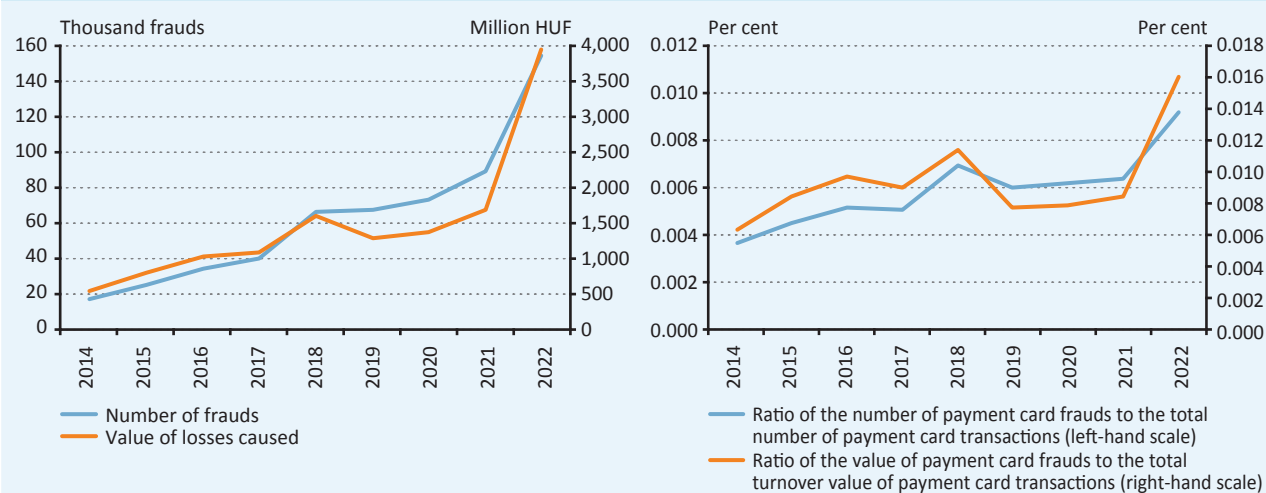
According to the MNB's data, many of the customers could achieve major savings on bank card and texting services. More than one quarter of the customers paid more than HUF 6000 for bank card services, while bank cards are already available for HUF 3,000–4,000 a year at the majority of banks. There is no difference in the possibilities of use of the various types of cards in shops or when purchasing online, and thus one can save thousands of forints a year by this. The annual average fee charged for texting services was around HUF 6390. However, there are customers who pay that much a month, and in the case of hundreds of thousands of customers the fee paid for text messages

exceeded HUF 20 thousand per year. Text messages in most cases could be replaced by push messages, which are usually free of charge.

2.5 FRAUDS OBSERVED THROUGH ELECTRONIC PAYMENTS

Although it is still negligible compared to the total turnover, the degree of payment card frauds increased, primarily in relation to online purchases and psychological manipulation. The number of frauds related to cards issued in Hungary increased by 74 per cent in 2022, while their value more than doubled (a growth of 135 per cent). It is important, however, that as a result of the dynamic expansion in turnover, these figures continue to account for a negligible portion of the total payment card turnover: less than 0.02 per cent in terms of both number and value. According to the ECB's report that processes 2021 data, the above ratio is below the European average⁵ (the relevant ratios in the EU in 2021: 0.021 per cent in terms of number and 0.028 per cent in terms of value). The data reveal that the mandatory strong customer authentication introduced in the case of transactions conducted within the European Economic Area was unable to permanently prevent the increase in frauds; it only changed their methods. Typically, many low-value frauds take place by circumventing the strong customer authentication, while there are fewer higher-value frauds related to transactions subject to strong customer authentication. In 2022, 86 per cent of the frauds took place during transactions exempt from strong customer authentication, but in spite of their high number they accounted for only 43 per cent of the

Chart 21
Changes in the number of frauds and in the related losses caused, as well as their ratio on the card issuing banks' side to the total payment card turnover



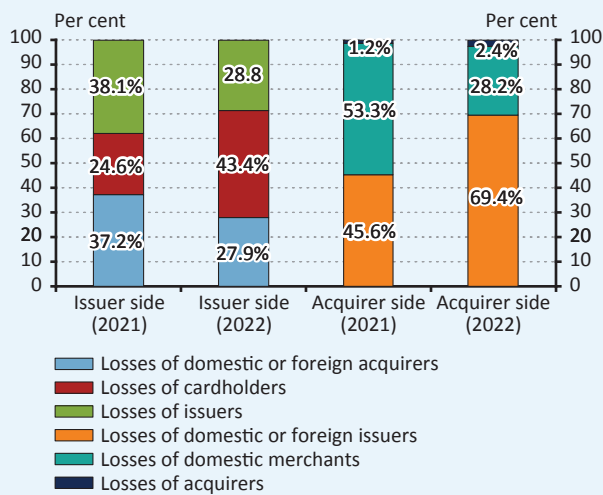
⁵ <https://www.ecb.europa.eu/pub/cardfraud/html/ecb.cardfraudreport202305~5d832d6515.en.html>

value of frauds. As for the types of frauds, the significance of phishing declined, and instead of that most of the frauds took place in connection with orders through the Internet, mail and telephone or using psychological manipulation.

Especially in the light of the increase in fraud indicators it is disadvantageous that most of the losses caused by payment card frauds is shifted onto bank customers. Although on the acquirer side the loss written off by acquiring banks almost quadrupled (a growth of 391 per

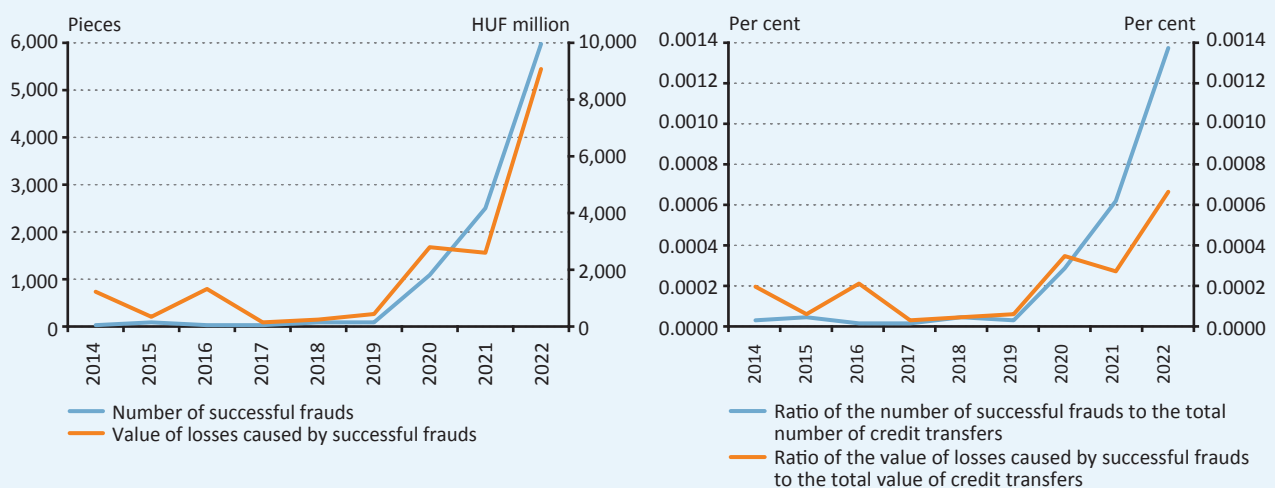
cent), it still accounts for only 2.4 per cent of the acquirers' losses. Most of the loss is charged to the issuing bank. Issuers charge 43 per cent (HUF 1263 million) of the issuer side loss to customers, while issuers bear 29 per cent (HUF 837 million) of it themselves. Considering that frauds are increasingly based on deception, and in that case the customer's responsibility is much greater, the value of the loss charged to customers grew by 172 per cent. This is also a reason why it is important to prevent these types of frauds as well as to increase customers' awareness and vigilance. This is supported by the MNB's CyberShield (KiberPajzs) programme presented in Chapter 3.2 as well as by various other measures.

Chart 22
Losses written off in relation to payment card fraud on both the payment card issuer and acquirer sides



Similar trends are also observed in the area of frauds not related to payment cards; there is an increase, but the ratio of frauds is still negligible. Here the ratio of frauds more than doubled, while their value grew by 256 per cent. Nevertheless, the 5971 cases of fraud still represented a value of only HUF 9 billion, which is less than one ten thousandth of the value of the total credit transfer turnover. Accordingly, the ratios of other than payment card frauds are still much more favourable than the ratios for card payments. Nevertheless, with the increase in credit transfers serious attention needs to be paid here as well to the forms of fraud that are spreading, such as psychological manipulation (e.g. when the customer is deceived with some danger threatening the customer or with an extremely advantageous purchase or investment offer).

Chart 23
Changes in the number of electronic frauds not related to payment cards and the value of the losses caused, as well as their ratio to the total credit transfer turnover



2.6 KEY FINDINGS OF PAYMENT INSPECTIONS

According to the payment inspections conducted in 2022, the operation of the payment service providers under review was satisfactory in general. Nevertheless, deficiencies were also found in most of the inspections. In 2022, 6 payment inspection procedures were launched, and 6 were closed, although most of them did not concern the same institutions due to the effect of the carry-over from the previous year. The resolutions sent out during the year contained 58 measures and penalties amounting to a total HUF 133 million at 4 institutions. In addition, in the case of one institution due to its failure to implement the provisions of a previous decision, while being imposed a fine of HUF 25 million the institution had to be repeatedly compelled to discontinue the infringement.

The inspection reports sent out during the year found 72 infringements, and one quarter of them were related to breaching the Payment Services Act⁶, practically and exactly corresponding to the previous year's ratio. With 10 per cent of the findings for the year under review, the violation of the form and content requirements of the framework contract and in relation to that the breaching of the requirements regarding the provision of information prior to concluding the framework contract were identified as the most frequent errors. According to its sanctioning methodology, the MNB considers this type of error as serious violation of the law, as it may be suitable for deceiving customers, including the consumers who are vulnerable in terms of enforcing their right and therefore are to be particularly protected, and suitable for impairing their rights to receive compensation pursuant to the Payment Services Act and for influencing their decisions in a disadvantageous manner. All this in a way that the framework contract with an unlawful content affects a wide range of customers, i.e. potentially it has a major negative impact on customers. Infringements related to the approval of payment transactions, the correction of payment transactions as well as to liability and loss allocation rules accounted for a relatively high ratio (6 per cent) of the errors, but most of them were one-off errors, typically affecting only some payment transactions.

The infringements related to the MNB Decree on the execution of payment transactions⁷ accounted for

nearly one third of all findings. Within that, the most important was the infringement of the rules concerning the immediate crediting of the amounts of incoming payment transactions, alone accounting for 14 per cent of the infringements identified in the year under review. Although the payment transactions executed with a delay or incorrectly sometimes disrupted the predictability of customers' payment transactions, overall, they did not jeopardise it. In the subject of the tolerated length of time of crediting the MNB issued a recommendation in 2020, and also this is still the most frequent type of error, the ratio of these errors has been steadily declining in the recent years.

Last year, violations of the provisions of the regulation regarding strong customer authentication⁸ as well as common and secure open standards of communication increased both in terms of their number and ratio. Most of the errors (10 per cent of the errors in the year under review) were related to the violation of the obligations and extraordinary measures regarding the application programming interface. The regulation formulates rules and technical requirements regarding strong customer authentication as well as common and secure open standards of communication that allow a major reduction of frauds and the increasing of security in the case of using electronic payment instruments as well as the provision of services by third-party providers.

The number of frauds can be significantly reduced with the application of well-functioning fraud monitoring systems, and together with that it is possible to efficiently ensure the protection of customers' money. The SCA Regulation requires payment service providers to have transaction monitoring mechanisms that allow the detection of unauthorised or fraudulent payment transactions. During the inspections it happened on several occasions that the institution under review either did not have a transaction monitoring system at all or the institution operated it only in the case of certain payment types (e.g. it did in the case of bank cards, but did not do so in the case of credit transfers). Parts of efficient everyday operations are that the payment service provider has adequate personnel for the handling of alarms, the rules are reviewed and fine-tuned regularly, and the spreading of new types of frauds is prevented by up-to-date monitoring of the new trends of frauds.

⁶ Act LXXXV of 2009 on the Provision of Payment Services (in the chart: Payment Services Act)

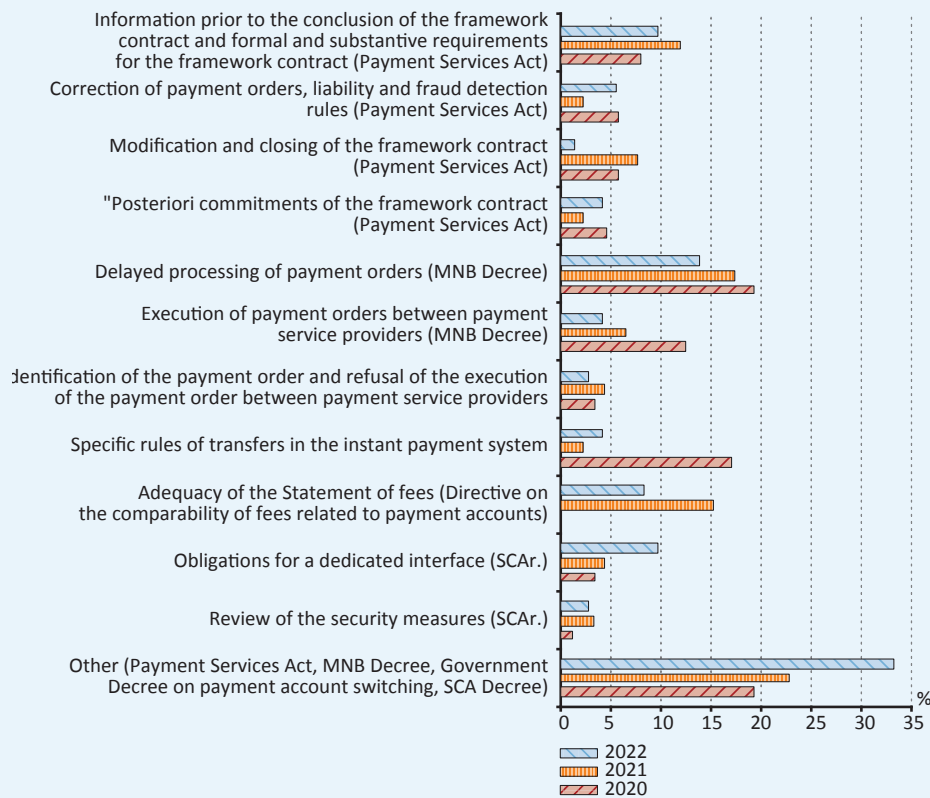
⁷ MNB Decree No 35/2017 (XII. 14.) on the Execution of payment transactions (in the chart: MNB Decree)

⁸ Commission Delegated Regulation (EU) 2018/389 of 27 November 2017 supplementing Directive (EU) 2015/2366 of the European Parliament and of the Council with regard to regulatory technical standards for strong customer authentication and common and secure open standards of communication (in the chart: SCA Regulation)

Of the three domestic statutory instruments adopted on the basis of the Payment Accounts Directive, most problems emerged in connection with statements of fees⁹ in 2022 as well. Within that, it accounted for 8 per cent of the errors in the year under review that compared to the requirements set forth in the relevant legislation, the annual statement of fees handed over to consumers was not complete or accurate, or was not sufficiently detailed. At the same time, during the year the MNB had only four findings in relation to the Decree on payment account switching and the Decree on access to basic payment accounts and the features of and charges payable for basic payment accounts.

Violations of the provisions of the Regulation on cross-border payments in the European Union¹⁰ accounted for 7 per cent of all the findings. Of the errors in 2022, three belonged to failures to provide information, when the customer did not receive adequate information on fees related to card-based transactions or conversion fees between currencies related to credit transfers. More serious than that was the infringement concerning two payment service providers, when the fees for cross-border SEPA payments and the appropriate domestic payments were not adequately harmonised, which may have resulted in additional costs as well for some customers.

Chart 24
Ratio of the main types of errors identified during the payment inspections (2020–2022)



⁹ Government Decree No 144/2018 (VIII. 13.) on certain issues related to the provision of information on fees for consumer payment accounts (in the chart: Payment Account Fees Decree)

¹⁰ Regulation (EU) 2021/1230 of the European Parliament and of the Council on cross-border payments in the Union (in the chart: CBPR2)

3 Financial market infrastructures

Smooth execution of the reliable, efficient operation of financial market infrastructures are essential for the execution of real economic and financial transactions.

Payments in central bank or commercial bank money and transactions performed with securities and other financial instruments require centralised systems that allow for the clearing and settlement of transactions. VIBER is a real-time gross settlement system operated by the MNB. Its primary purpose is the settlement of large-value money and capital market transactions between participants and on behalf of their customers and the settlement of transactions cleared by related financial market infrastructures (Interbank Clearing System (ICS), KELER Group, Continuous Linked

Settlement System (CLS)). The Interbank Clearing System (ICS) is a gross payment system mainly for the clearing of households' and companies' low-amount payments operated by GIRO Zrt. (GIRO), offering three clearing methods: instant, intraday and overnight clearing. Members of the KELER Group, i.e. the central securities depository (KELER CSD) and the central counterparty (KELER CCP), are responsible for securities clearing and settlement services, and the registration of domestically issued securities. CLS is an international Fx settlement system operated by CLS Bank. It is based on a multi-currency payment-versus-payment (PvP) mechanism and eliminates FX settlement risks.

Table 1
Trends in turnover in Hungarian financial infrastructures (2020–2022)

Overseen systems		Volume (thousand pieces)			Value (HUF thousand billion)		
		2020	2021	2022	2020	2021	2022
VIBER		1,844	1,845	2,083	1,678	2,338	2,640
ICS	overnight clearing	96,121	97,353	73,777	9	10	5
	intraday clearing	154,179	138,021	156,590	113	130	178
	instant clearing	93,660	135,583	153,352	14	22	28
KELER		490	545	610	173	203	250
KELER CCP*		2,718	2,002	2,518	9	7	9

* Data refer to the capital market.

PAYMENT SYSTEMS

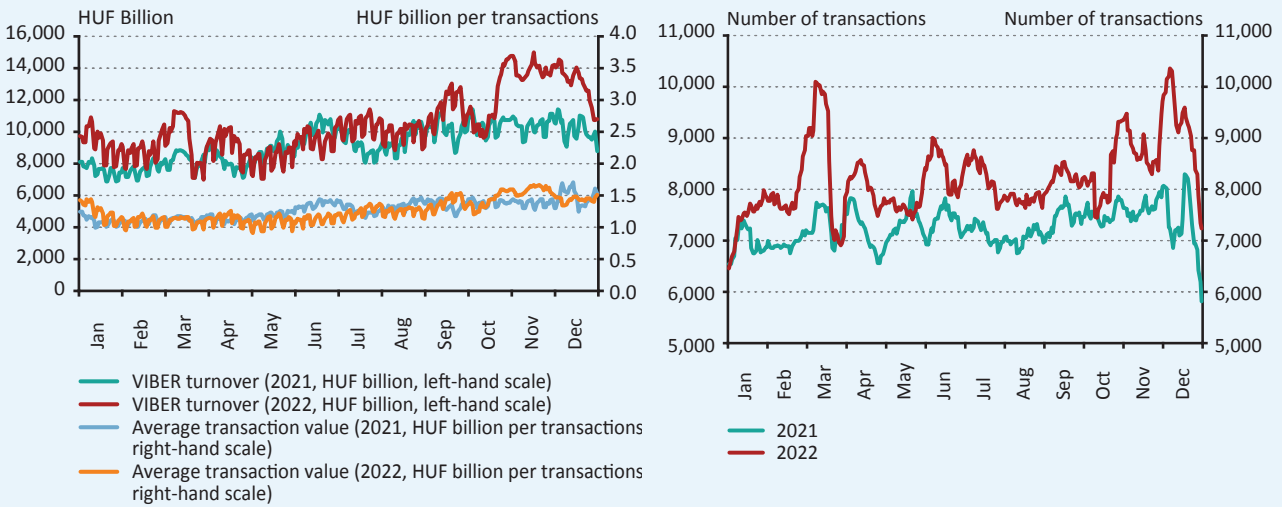
3.1 VIBER

In 2022, the VIBER turnover increased by 13 per cent both in terms of value and the number of transactions. Market volatility, which increased as a result of the coronavirus pandemic, is still visible in the turnover. A seasonal comparison with prior year shows that the growth of turnover was particularly strong in 2022 Q1 and Q2. (Chart 25) The average value of transactions in VIBER did not increase significantly in 2022. The growth in value is attributable to interbank transactions and ones related to the settlement of ICS intraday clearing. The rise in the number of transactions in the turnover was mostly the result of increases in customer transactions (21 per cent) and interbank transactions (11 per cent).

In 2022, the operation of VIBER was highly reliable and safe, the pandemic and the switching to hybrid work schedule did not have any provable negative impact on the operation of VIBER. There was one month when the availability ratio of VIBER did not reach the 99.7 per cent oversight expectation. Compared to the previous year, the service continuity risk slightly increased, due to the longer incident times of complete service outages¹¹. The operation of VIBER was stable throughout the year, and there were only 5 days when participants faced short complete service outages, hardly exceeding two hours during the whole year.

¹¹ Complete service outage: an incident that took place at the MNB reduces VIBER availability

Chart 25
Changes in the value and average transaction value of the VIBER turnover (left-hand chart) and number of transactions (right-hand chart) in an annual comparison



3.2 ICS

The number of transactions on the three ICS platforms increased by 3 per cent, exceeding 383 million in the year as a whole. In terms of value, a major portion (84 per cent) of the ICS turnover was executed in intraday clearing, 13 per cent in instant clearing and 3 per cent in overnight clearing. Only part of the direct credits of the Hungarian State

Treasury (pension and family support benefits); and ICS participants’ direct debits remained in overnight clearing. The number of transactions and the degree of the change were evenly distributed across intraday and instant clearing, while a decline is observed in overnight clearing both in terms of value and the number of transactions. (Chart 26).

Chart 26
Breakdown of the turnover on the ICS platforms (2020–2022)

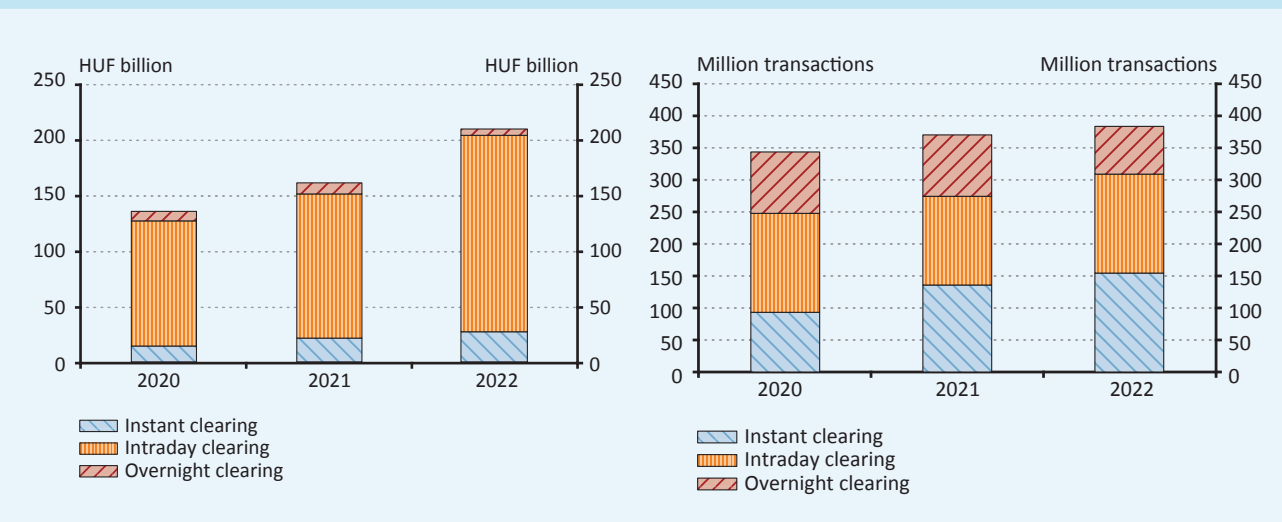
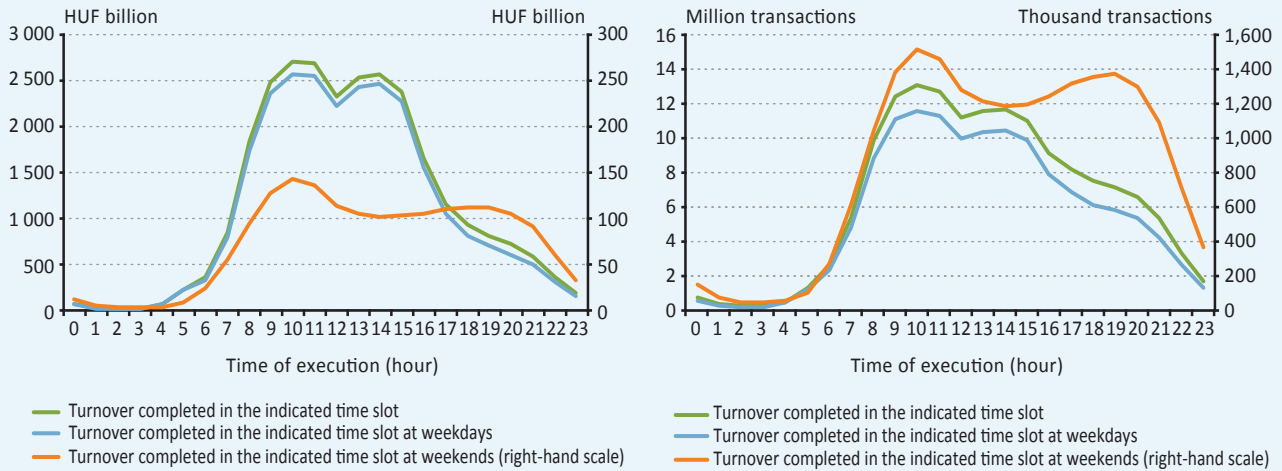


Chart 27
Intraday trends in the value (left-hand chart) and volume (right-hand chart) of the turnover in ICS instant clearing in a breakdown by hour (2022)



Apart from the dawn period, customers launched their instant credit transfers continuously in 2022 as well. Overall, turnover is the highest between 8 and 16 hours both in terms of the number and value of transactions. (Chart 27).

All the three ICS platforms, which provide instant, intraday and overnight clearing, operated in a stable and reliable manner in 2022 as well, without any major breakdown.

In most of 2022, the availability of overnight, instant and intraday clearing exceeded the levels of 99.9 per cent and 99.8 per cent set forth in the general terms and business conditions. In the months when the availability failed to reach the expected value, transaction volumes were either not affected or were negligible, and did not have any major impact on the stable and reliable functioning of clearing.

3.3 CLS

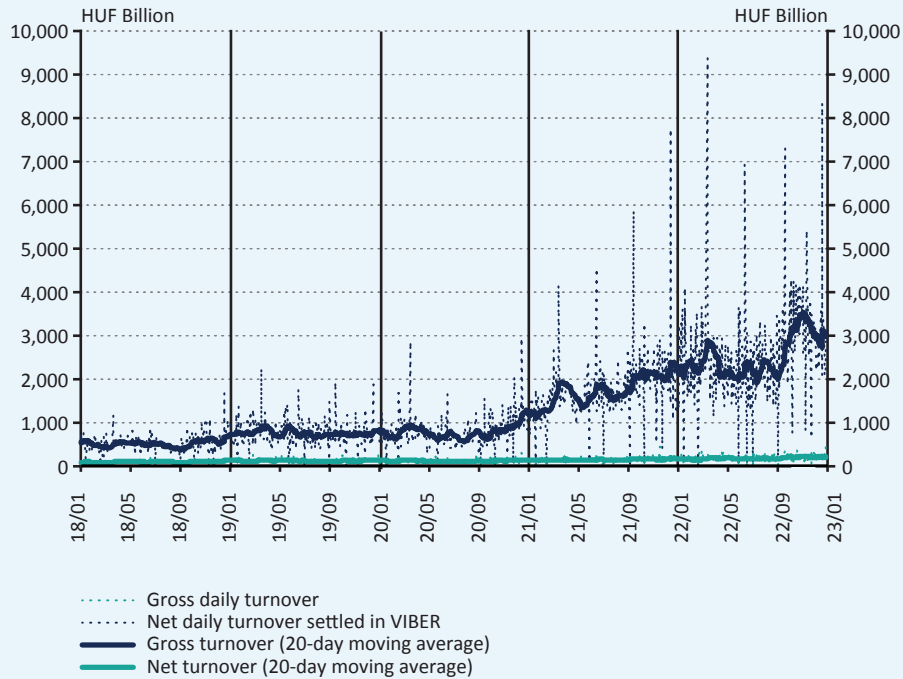
In 2022, the forint settlement turnover increased by more than 40 per cent in CLS, and the circle of banks in Hungary providing forint account maintenance services connected with CLS expanded by a new member. The gross forint turnover settled in CLS rose from HUF 440 thousand

billion in 2021 to HUF 636 thousand billion, and thus the daily average turnover was also up from HUF 1748 billion to HUF 2525 billion in a year. Meanwhile, the number of participants grew to 32 by end-2022. The rise in turnover was the result of the new entrant as well as the increasing activity of the older participants in forint settlement. Further future expansion is also forecast by the fact that a new player launched its forint account maintenance service connected with CLS in December. (Chart 28)

The growth in CLS turnover took place under stable operations.

CLS rendered its service with 100 per cent availability throughout the year. The 6 Hungarian banks that keep nostro account in Hungary and provide forint liquidity for the settlement of transactions experienced late payment only on 7 days during the morning processes of the 254 settlement days of the year. On one occasion the incident resulting in a complete outage of VIBER coincided with the period of payments to CLS, but it did not prevent nostro account providers from complying with the pay-in schedule. The MNB used a workaround solution to send the messages about forint payments to CLS, enabling CLS to finish the settlement of the given day on time.

Chart 28
Daily gross turnover settled in the CLS system and related daily net forint turnover settled in VIBER



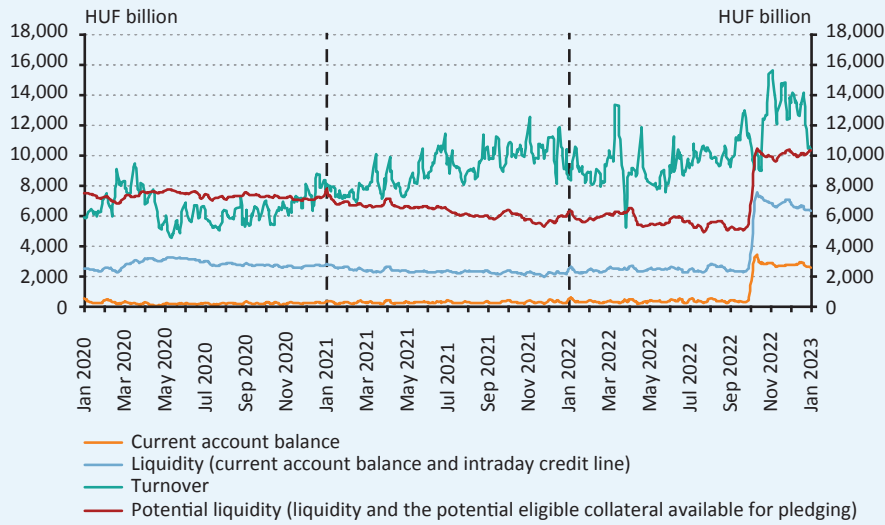
3.4 LIQUIDITY IN PAYMENT SYSTEMS

A Liquidity in the VIBER and ICS is essentially determined by the same factors; any changes in these factors equally affect both systems and their participants. The settlement of ICS intraday and overnight clearing takes place directly in VIBER. Accordingly, for the payment transactions the participants use the same liquidity - i.e. the account balance on their payment account held with the MNB and the credit line received in exchange for the securities holdings pledged to the MNB - in VIBER as well as in the ICS overnight and intraday clearing. In the case of the ICS instant clearing the settlement takes place by including a further step. In the case of the ICS instant clearing the settlement takes place by including a further step. For the instant clearing, participants have to pre-finance the funds on the technical collecting account maintained by the MNB. In line with that, on behalf of the MNB, GIRO manages the instant settlement accounts for participant. In addition to the turnover that takes place, the balance can be increased or reduced to the debit or credit of the liquidity in VIBER through instant internal transfer. Outside of VIBER operating hours the liquidity can be expanded through central bank lending, i.e. by instant credit provided on the basis of securities holdings pledged to the MNB.

3.4.1 Factors that influence liquidity

The liquidity of VIBER participants increased considerably by the last quarter of the year, which is primarily attributable to the increased account balance. Liquidity was still sufficient for conducting the increased and more volatile payment turnover. A major change in the central bank toolkit affected the participants' liquidity in 2022. In the first three quarters of 2022, the level of liquidity in VIBER stood at a relatively constant level of HUF 2500 billion on average. As of end-September, the account balance and intraday credit line of VIBER participants started to increase drastically, and thus the value of liquidity exceeded HUF 7500 billion by 10 October, and the level of liquidity remained at HUF 6000–7000 billion until end-2022. As a result of the increase in the minimum reserve ratio, by 10 October the level of the payment account balance held in VIBER rose to a peak of HUF 3430 billion from the band between HUF 150 billion and HUF 590 billion (Chart 29). The increase in the intraday credit line from HUF 2000 billion early in the year to HUF 4300 billion by mid-October also played a role in the rise in liquidity. The composition of the pledged collateral behind the intraday credit line also changed in 2022. While the share of government bonds declined gradually by 25 percentage points in the last quarter of 2022, the share of liquidity deposits accounted

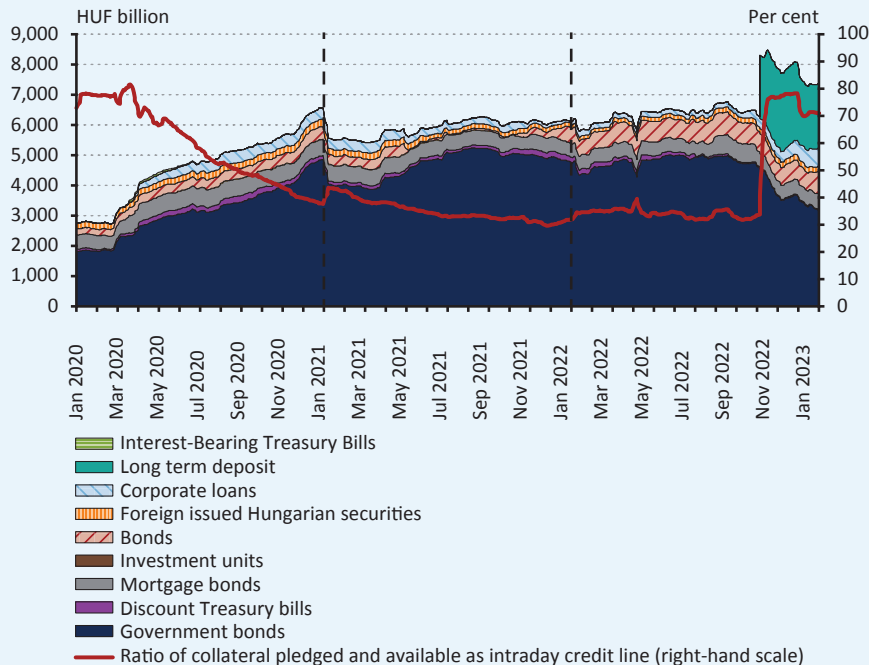
Chart 29
VIBER liquidity and turnover (2020–2022)



for almost 30 per cent of the collateral after the launch of the liquidity facility on 6 October, and the share of corporate loans expanded by 5 percentage points, accounting for more than 10 per cent of the collateral by end-2022 (Chart 30). A sufficient proportion (40 per cent) of VIBER participants'

potential liquidity¹² comprises securities on the balance sheets of the participants that may be optionally pledged. As a result of the rise in liquidity, the ratio of the credit line that can be used for payments also increased considerably compared to the total pledged collateral (Chart 30).¹³

Chart 30
The ratio of pledged collateral portfolio to the credit line¹³



¹² From the perspective of payment systems, potential liquidity is the sum of the account balance of the VIBER participant's payment account held with the MNB, the intraday credit line provided against the securities pledged by the participants to the central bank, and other, additionally available securities on the credit institution's balance sheet that may optionally be pledged.

¹³ Ratio of credit line that can be used for payments to the total pledged collateral (excluding SME loans)

3.4.2 Liquidity management of VIBER and ICS participants

VIBER

Payment system participants efficiently managed their liquidity in 2022 to settle their significantly increased turnover. Growth in the intraday value of VIBER turnover is observed in almost all time bands; it was lower than the figures for 2021 only between 6:00 a.m. and 7:00 a.m. and between 4:00 p.m. and 5:00 p.m. While 60 per cent of the value of the VIBER turnover was initiated by 2:00 p.m., in terms of their number, transactions were already launched by 10:00. The higher value transactions of VIBER participants, similarly to the previous years, were still settled in the late afternoon and evening hours, whereas a major part of the daily VIBER turnover was still settled in the last hour preceding the closing of VIBER. These transactions were fundamentally related to transactions with the MNB, interbank transactions and securities settlement as well as to the provision of cover for instant clearing. It is interesting that the timing of VIBER turnover went through a drastic change as a result of the amendment to the central bank toolkit. The deposit quick tender with an interest rate of 18 per cent was launched as of 14 October, and VIBER participants already deposited HUF 3500 billion by 21 October and HUF 5300 billion by 7 November in it. Depositing in the quick tender typically started after 17 hours. As a result, instead of the previous level of 10–15 per cent, 40 per cent of the VIBER turnover took place in the last hour following the introduction of the quick tender (Chart 37).

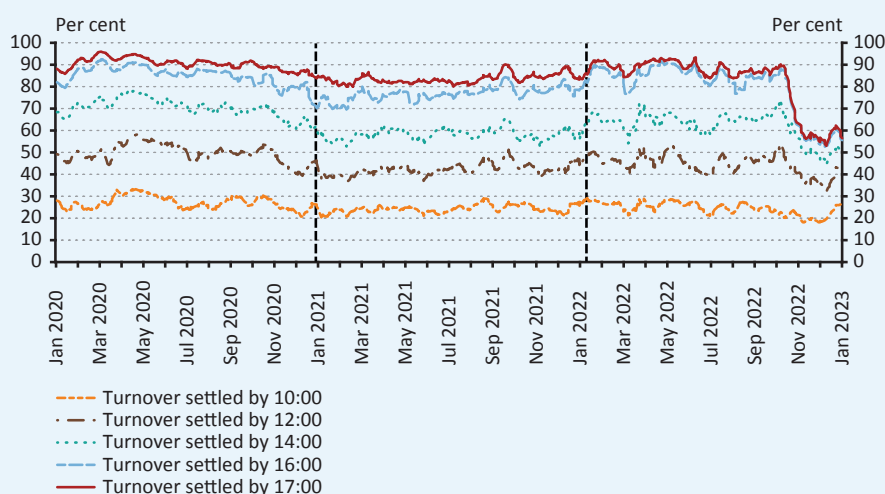
As a result of the ample liquidity in the system, still only a very low portion of VIBER transactions were queued due to shortage of liquidity. Their number declined by 45 per cent compared to the previous year, and the average time spent in the queue also decreased significantly compared to 2021. On the whole, half a thousandth of VIBER transactions were queued.

Compared to the previous year, VIBER participants used their credit line nearly to the same degree, but the pattern by time band of the value of intraday use was different than in 2020 or 2021. While VIBER participants operated with a lower than usual use of the credit line before noon, in the afternoon hours they used higher amounts. The majority of participants are able to settle their VIBER transactions relying on their account balances. The maximum utilisation of intraday credit line (MICL) at systemic level is still low (0.1–7.6 per cent), the value of which decreased by more than 4 percentage points compared to 2021.

ICS instant intraday and overnight clearing

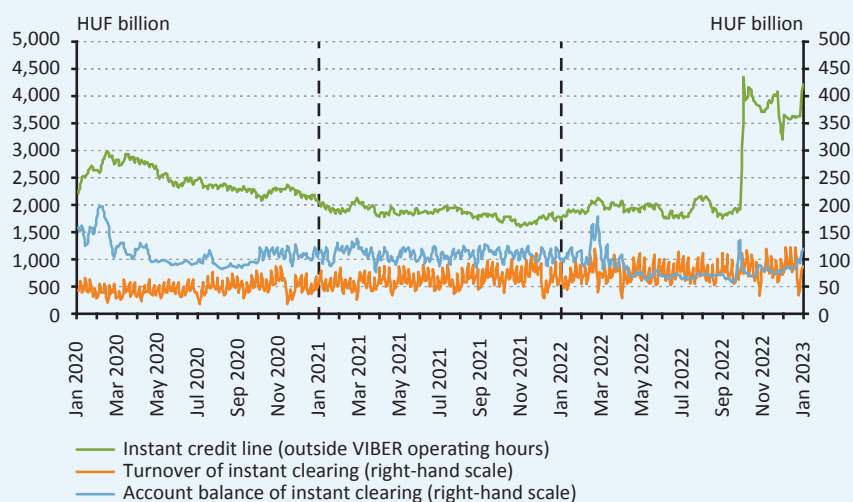
For the ICS instant clearing, participants continue to carefully plan the liquidity required for carrying out the turnover in 2022. The turnover in intraday clearing cycles was balanced; sufficient liquidity was available both at the level of the system and at individual participants' level. No transaction was refused due to uncovered positions in overnight clearing. In 2022, participants' aggregate account balance in the instant clearing was typically between HUF 60–180 billion, i.e. it declined compared to the previous

Chart 31
Timing of VIBER turnover based on the value of transactions (the portion of total value of daily transactions completed until a specific point in time) (2020–2022)



Note: Excluding the transactions of the MNB, KELER CSD, the Hungarian State Treasury, GIRO and the Hungarian Post.

Chart 32
Turnover and liquidity of instant clearing (March 2020 – 2022)



Note: 5-day moving averages.

year. The size of the account balance is outstanding in relation to the four-day holiday of 15 March, at the end of the year and in October 2022, which is very likely attributable to the change in the minimum reserve ratio. (Chart 32)

In 2022 for the settlement of intraday clearing cycles in VIBER only 0.1–3.4 per cent of the total liquidity available at any moment in VIBER was necessary. However, shortage of funding occurred in the ICS intraday clearing in 2022 as well, while the number of transactions affected by uncovered positions was up compared to the previous year. If an ICS participant fails to provide sufficient funding in VIBER for the settlement of the transactions submitted for the respective ICS cycle, the transactions left without funding are transferred to the next clearing cycle in the case of cycles 1–9, while the transactions uncovered in cycle 10 are rejected by the system. In 2022, due to liquidity shortage, some ICS participants on 73 occasions in total were unable to provide cover for transactions worth HUF 172.4 billion, so they were rolled over to the next cycle.

Resulting from the way of the settlement of overnight clearing, there is no need for participants' continuous liquidity management. In 2022 there were 8 occasions when ICS participants had to provide cover in overnight clearing in VIBER for their transactions remaining in the queue. Considering that the liquidity in VIBER provided sufficient cover in all the 8 cases, no transaction was

refused in overnight clearing in 2022 due to uncovered positions.

CLS

In 2022, payments to CLS did not cause any liquidity problems in VIBER, and thus the related clearing and settlement risk remains low. For the CLS settlement of their foreign exchange transactions with a forint leg, direct system members of CLS provided forint funding through 6 Hungarian VIBER participants as HUF-nostro-agent, since they themselves are not direct VIBER participants. Payments related to CLS-settlement will be completed in 2 time windows specified by CLS, i.e. between 7:00–8:00 (CET) and 8:00–9:00 (CET). In 2022, daily average CLS pay-in turnover reached HUF 168 billion¹⁴, which accounts for 0.1–4.5 per cent of the total daily VIBER turnover. In 2022, in spite of the substantial turnover, nostro agents made their CLS-related payments mostly relying solely to their account balances and intraday credit lines were utilised rarely.

SECURITIES INFRASTRUCTURES

3.5 KELER

KELER's turnover continued to grow in 2022 as well, exceeding the pre-COVID 2019 turnover by HUF 24 thousand billion, i.e. 160 thousand transactions. At the same time, settlement risks increased, as there was a shift from delivery versus payment (DvP) transactions towards

¹⁴ Taking into account both payments to CLS and payments initiated by CLS, the daily average transaction volume doubles, i.e. increases to some HUF 335 billion. This equals to 0.2–9 per cent of the average VIBER turnover.

free-of-payment (FoP) transactions. Accordingly, in 2022 the DvP type accounted for nearly 71 per cent of the total value of transactions within the total turnover,¹⁵ whereas the ratio of DvP transactions was 92 per cent in 2021. The rising trend of the turnover can still be observed; it amounted to HUF 250 thousand billion, with 610 thousand transactions. In 2021, the value of the turnover amounted to HUF 203 thousand billion, which was related to 545 thousand transactions. Most of the turnover concerned long-term government securities in 2022 as well. During the year, the rise in market interest rates and the issue of government securities contributed to the growth in both value and volume of the related settlements as well. In parallel with that, failures of settlement were also mostly experienced in government securities, mainly in the over-the-counter (OTC) market.

In 2022, 12.47 per cent of the value of all the transactions settled by KELER failed, which is a significant deterioration compared to 2021, when this ratio was a mere 3.58 per cent.¹⁶ The growth in the trading volume of government securities entailed an increase in settlement risks as well in 2022. During the settlement of transactions, KELER executes funds transfers (cash)¹⁷ and securities transfers of the parties to the transaction on the scheduled settlement date¹⁸ of the securities. It is a failed settlement if the settlement of the securities transaction does not take place on the intended settlement date. Failed settlements may have two kinds of final status: they are either settled with a delay or not at all. 62 per cent of the settlement fails were on the securities side, also meaning a kind of trend reversal compared to the 2019–2021 period, when the ratio of the cash side was higher. Nevertheless, looking at the number of failed transactions, 61 per cent took place on the cash side and 39 per cent on the securities side, and thus in terms of volume these ratios are in line with the experiences of previous years.

The operation of the systems of the KELER Group was basically reliable; the availability indicators fell short of the expected level at the beginning of the year, the reason of which was the introduction of the KSDP M1.

The initial special support¹⁹ applied in view of the system introduction ensured the stability of the settlement and clearing systems, then, after the first six months of the year, normal and secure operation at the usual level was experienced even without the special support. The most significant outage was caused by an incident affecting the SWIFT connection and resulting in a whole-day outage of clearing and settlement; the operation was restored on the next workday.

During 2022, the European Council added further tightening measures to the Council Regulations related to the 2014 sanctions against Russia²⁰ and the 2006 sanctions against Belarus.²¹ A new feature in connection with them is that sanctions affecting the capital market also became effective, entailing further compliance verification tasks for central securities depositories and central counterparties as well. Central infrastructures also became affected; in regard to negotiable instruments issued after 12 April 2022, the services that can be provided by central infrastructures became forbidden pursuant to the conditions set out in the regulation. Both KELER and its subsidiary, KELER CCP set up their own internal processes necessary for the verification, as a result of which the transactions affected by the new atypical sanctions may be detected from the financial services' side as well. The MNB was designated as competent authority²² to supervise the compliance with the restrictive measures of financial nature against Russia and Belarus.

3.6 KELER CCP

In 2022, the turnover of markets cleared by KELER CCP increased by 86 per cent compared to 2021; of them, the performance of energy markets was outstanding. KELER CCP clears, as a central counterparty, financial instruments traded on the Budapest Stock Exchange (BÉT), on the MTF markets, and the domestic gas markets, and it provides general clearing membership services for its energy market non-clearing members for spot and derivatives electricity, natural gas and emission quota products traded on the German ECC cleared markets. In 2022, the total

¹⁵ Transactions may be divided into two main types (DvP and FoP). The important difference is whether the buyers and sellers arrange the cash settlement through or outside central securities depositories.

¹⁶ MNB based its analysis on the weekly sent settlement fails report, which is although similar but not entirely comparable with the monthly sent so-called CSDR7 settlement fails report, applicable since February 1, 2022, by the SDR regulation. Because CSDR7 has no dataset for 2021, only for 2022, the MNB has decided to still use the weekly sent reports for the purpose of carrying out the year-on-year comparisons.

¹⁷ If the transaction has a cash leg as well, it cannot be interpreted in the case of the FoP transaction type.

¹⁸ In SDR terminology ISD, i.e. intended settlement date (typically T+2)

¹⁹ Early Life Support.

²⁰ Council Regulation (EU) No 833/2014 of 31 July 2014 concerning restrictive measures in view of Russia's actions destabilising the situation in Ukraine.

²¹ Council Regulation (EC) No 765/2006 of 18 May 2006 concerning restrictive measures in view of the situation in Belarus and the involvement of Belarus in the Russian aggression against Ukraine.

²² Section 3(1) of Government Decree No 447/2022 (XI. 9.)

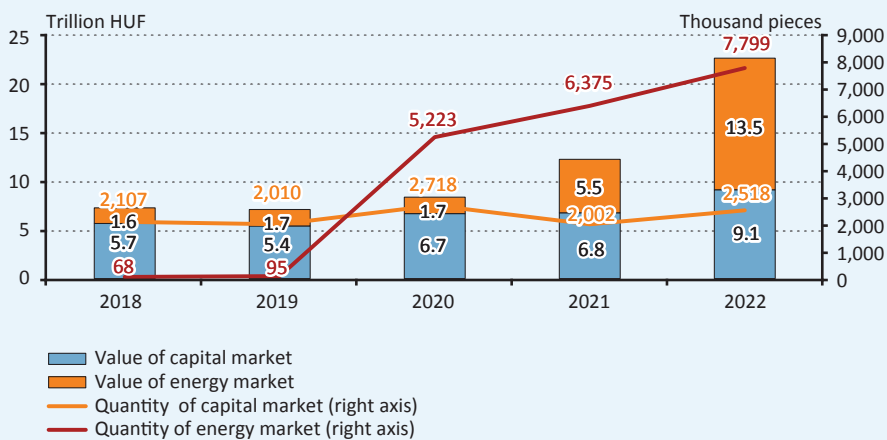
value of capital market transactions cleared by the central counterparty was around HUF 9,100 billion, representing a 33 per cent increase compared to the previous year. Compared to 2021, the annual turnover of spot capital market transactions increased by 43 per cent, corresponding to a growth of around HUF 1.5 billion, while growth in derivative markets also reached 27 per cent, worth HUF 846 billion. In the case of spot gas markets cleared as central counterparty, turnover doubled compared to 2021, while for derivative gas markets, turnover has almost halved. Within the service related to the ECC and provided as a general clearing member, there was an increase of more than 100 per cent in the energy spot markets and 65 per cent in the derivative markets compared to the previous year. (Chart 33)

The outbreak of the Russia–Ukraine war and the energy market crisis resulted in high energy market volatility in 2022, which had a significant impact on European central counterparties that were involved in the clearing of energy market products. The extreme price increases and market uncertainty seen in March and August 2022 resulted in extraordinary risks and exposures. As a reaction to that, clearing houses activated and further strengthened numerous elements of their respective risk management frameworks, including a major increase in individual and collective collateral to be placed in the guarantee system. Market players and market infrastructures became exposed to extreme liquidity pressure, and obtaining adequate liquidity became critical. KELER CCP also steadily increased all of its guarantee elements in order to become as resilient as possible when handling a possible default, as energy

market turbulences increased the risks of the energy trading companies that use the services of KELER CCP. The European Union is trying to defend itself against the extreme price rises with joint action, as a result of which, in order to ease the liquidity pressure on energy traders, the acceptance of unsecured bank guarantee as collateral was temporarily permitted. In addition, another regulation was adopted in December that makes it possible to maximise the prices of certain listed gas products. The mechanism is to be used as of February 2023, whereas the analysis of the effects on the market and central counterparties will be conducted by ESMA.

KELER CCP’s annual supervisory College meeting as per EMIR²³ took place successfully in 2022 as well. As a result, the College found the compliance of KELER CCP’s operation with the law adequate as well as the MNB’s supervisory and oversight activity. The College, which consists of the international supervisory authorities and ESMA²⁴, held its meeting on 20 October in online form. In the first part of the meeting, the supervisory and oversight activities carried out by the MNB in 2022, the comprehensive supervisory inspection completed in 2022, the compliance of KELER CCP’s risk management and IT operations as well as the supervisory and oversight tasks planned for 2023 were presented and discussed in detail. In addition, the Recovery Plan of KELER CCP was also adopted, with certain amendment obligations. In the second part of the meeting, the most important events of the previous year in KELER CCP, the compliance with forthcoming changes in legislation, such as the planned compliance with the framework for recovery and resolution and the framework aiming at the

Chart 33
Number and value of transactions settled by KELER CCP in the capital market and energy market



²³ EMIR: Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories

²⁴ European Securities and Markets Authority

improvement of settlement discipline, as well as KELER CCP's most important future strategic objectives and plans were presented. During the meeting, the members of the College found both the MNB's supervisory and oversight activity as well as KELER CCP's operation according to the EMIR adequate, so the meeting was successfully closed.

Compared to 2021, both the number and value of the defaults not settled until the strictly determined deadlines regarding stock exchange settlements increased in 2022, and thus the ensuing risks as well as the operational tasks related to their management also increased on KELER CCP's side. In the capital markets, KELER CCP provides guarantee for the cash and securities side²⁵ settlement of transactions as well, while in the energy markets²⁶ only financial guarantee is undertaken. Practically all the defaults are related to capital markets. There was only one case in connection with the gas markets, and in the period under review there was no default in relation to the ECC markets

served as general clearing members. Within capital markets the ratio of defaults was the highest at HUF 12.2 billion in the MTS government securities market and in the case of the stock exchange cash market at HUF 6.6 billion. Defaults took place only on the securities side. Defaults were most often due to client defaults, other external institutional defaults as well as technical errors. In connection with the capital market defaults it can be said that the settlement took place within 4 account days in each case. Most often, the settlement of the transactions took place already within the day, i.e. the defaults actually meant only delayed settlement compared to the strict deadlines in each case. There was no default that was not settled finally, and thus it did not become necessary to initiate a buy-in either. In relation to the gas markets there was one default in 2022 with a value of HUF 1 billion in the CEEGEX market. The default was temporary in this case as well; the energy market player concerned did not have sufficient liquid funds available for meeting the financial obligation in time, but the transaction was settled later.

²⁵ Providing guarantee on the securities side is ensured by operating the mechanisms aiming at the obtaining of the missing securities and by retaining the countervalue.

²⁶ Energy market is a generic term, comprising the electricity and natural gas markets as well. The description corresponding to the subject is used at the parts related to the separate markets.

4 Current issues of payments and financial market infrastructures

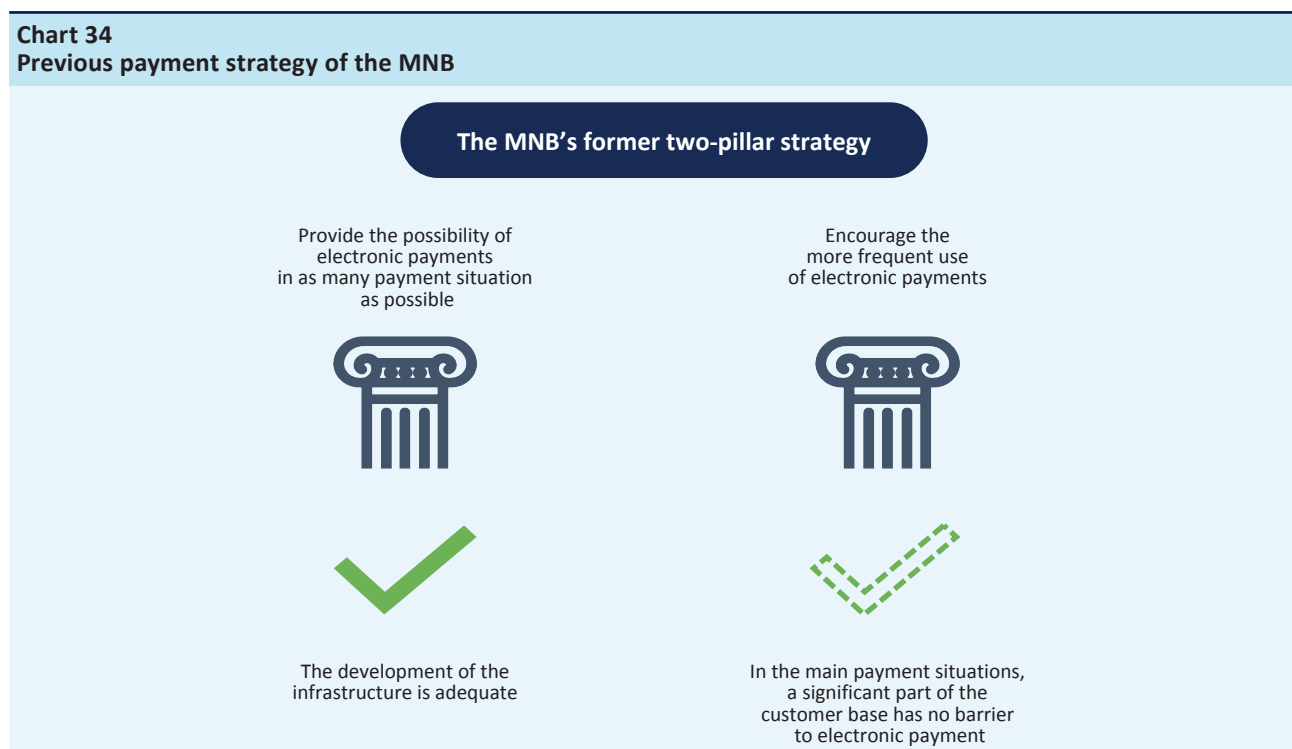
4.1 MNB'S ELECTRONIC PAYMENTS STRATEGY TO 2030

In 2023, the MNB renewed its payments strategy²⁷, and thus, following the two-pillar strategy comprising infrastructure development and incentives to use applied before, now the emphasis will be on the incentives to use. As a result of the improvement of infrastructure implemented within the framework of the MNB's payments strategy to date, electronic payment has become possible practically in any situation. The bank card acceptance network expanded considerably in the past decade. As a result, this payment method can already be used in the majority of purchases. In addition, the steady development of the credit transfer infrastructure and the introduction of instant payment allowed this payment method to be an alternative to cash in any payment situation. In parallel with that, in view of the general stimulation of use concerning

a wide range of payment situations and customers, the ratio of use of electronic payment solutions also increased considerably, although cash is still the most often used mode of payment. The MNB's latest survey of households' payment habits suggests that the coverage by bank accounts and bank cards is high enough at the level of the whole adult population, i.e. access to electronic payments in general is not an obstacle to a more intensive use of electronic payments.

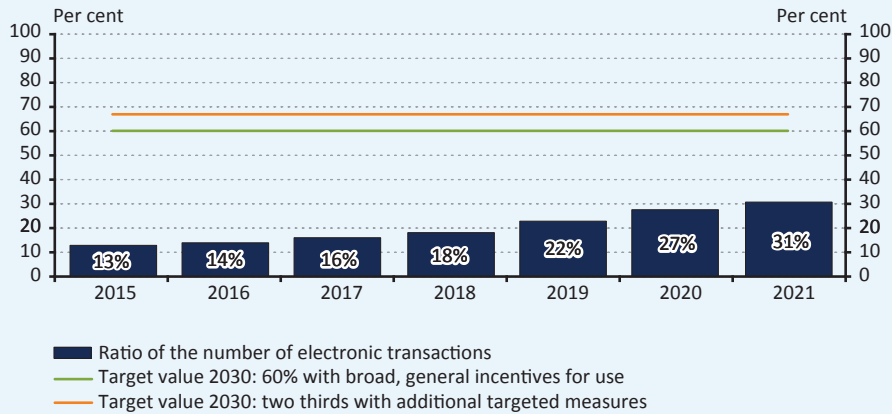
The main objective of the MNB's new payments strategy is that from the current 31 per cent the share of electronic transactions in the economy as a whole increase to at least 60 per cent in the case of a wide-ranging, general incentive to use and at least to two thirds in the case of further targeted measures by 2030. Relying upon the achievements of the previous strategy resulting from broad-based, general infrastructure development and incentives to

Chart 34
Previous payment strategy of the MNB



²⁷ Availability of the "Payments 2030" electronic payments strategy: <https://www.mnb.hu/en/payments/publications/payments-2030>

Chart 35
The MNB's main payments strategy objective

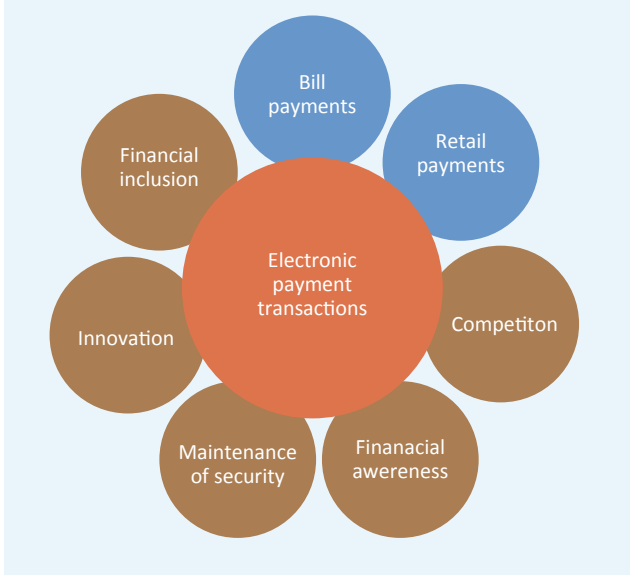


Note: for determining the ratio of electronic transactions, all the payment transactions carried out in the whole economy, i.e. the number of purchases in shops and on the Internet as well as bill payments and also of transactions within various sectors (households, corporations and public actors) and between sectors are taken into account.

use, and partly continuing that, targeted measures will also be needed in the next period. Firstly, they allow an increase in the share of electronic payments even in those social groups and payment situations where it is below average for some reason at present. Secondly, they can improve households' knowledge and awareness of payments, which is essential for them to be able to make well-informed choices between payment options. The MNB's payments analysis and research activities allow the identification of segments where further measures are needed in order to achieve the main objective of the payments strategy.

Until 2030, general and targeted measures to encourage use need to be applied in seven intervention areas in order to develop payments. Within that, there are areas that contribute to the development indirectly, and there are ones that do so directly. Those areas where interventions contribute indirectly to the achievement of the objective tend to promote the widespread use of electronic payment methods more slowly, in the medium term, and their impact is broad and may affect several areas. These areas are the improvement of financial inclusion, the strengthening of innovation in payments, the promotion of competition, the improving of financial awareness and the maintenance of security. In addition, there are certain segments of public policy that can affect the target indicator, the ratio of electronic payments directly and in a short time. They include, for example, the targeted increasing of the electronic ratio in the areas of retail payments and bill payments.

Chart 36
Areas of intervention identified in the payments strategy



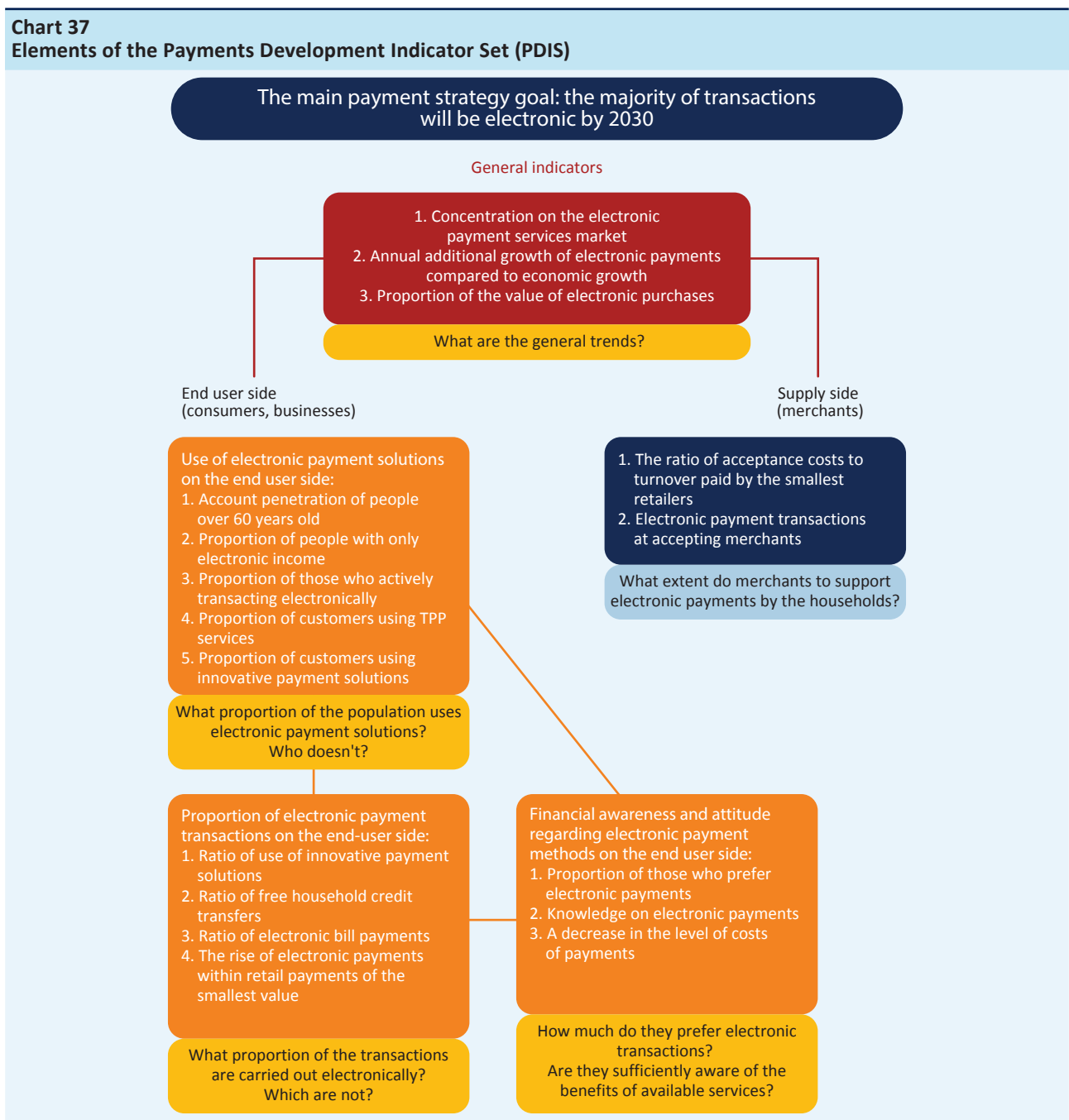
It is possible to achieve the objectives set out in the strategy as well as to work out and implement the necessary measures only in close cooperation with the stakeholders. Upon formulating the payments strategy, the MNB held wide-ranging discussions with all the public and market players of the payments market concerned, i.e. with the representatives of the financial, trade and bill issuing sectors. The MNB will put special emphasis on the consultation with the stakeholders and on the coordination

between the actors participating in the implementation in the future as well.

The MNB created the Payments Development Indicator Set (PDIS) in order to evaluate the situation of payments in Hungary, measure the achievement of the targets set and monitor the implementation of the relevant measures. In the PDIS the MNB sets measurable targets and monitors their achievement in connection with 18 indicators. Apart from general types of indicators, the PDIS includes such indicators as well which rather cover more significant sub-areas. On the other hand, areas currently considered to be highly developed, or that do not seem to require the

central bank's or any other central intervention based on the data currently available, were not included in the indicators and the areas to be developed. They include, for example, the indicators that characterise the general level of development of the electronic payments infrastructure. The selected indicators can be applied to track the development of the supply side of the payments market, i.e. the changes in the expansion and usage frequency of payment services available to the end-users (consumers, companies), and the changes in the end-users' financial awareness. In addition, separate indicators present the development of the supply side of the payments market, i.e. how the beneficiary's side (primarily acquiring merchants) develops its services and

Chart 37
Elements of the Payments Development Indicator Set (PDIS)



how the utilisation of the acceptance network changes. In addition to the sub-indicators of the two sides, more general key indicators have also been developed that measure the development and future development of the total market.

The MNB's electronic payments strategy is in line with its strategy aiming at the security of the provision of cash, and these do not include controversial objectives. The objective of the electronic payments strategy is that, in addition to cash, the use of electronic payment solutions may be a real alternative in any situation for all the members of the society, and that all those concerned may be adequately informed about the possibilities of use and the pricing of these solutions, enabling them to make well-informed decisions whether to pay electronically or by cash.

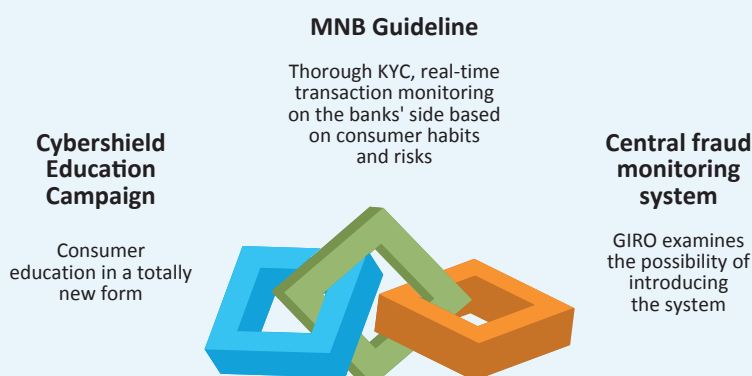
4.2 HANDLING OF FRAUDS OBSERVED THROUGH ELECTRONIC PAYMENTS

In parallel with the acceleration in digitalisation processes, financial frauds are also increasingly shifting towards electronic payments channels. At the same time this is not an indication of deficiencies in the related infrastructure, as Hungary is especially secure in this respect even in international comparison. Digitalisation has become increasingly wide-ranging in recent years, and finances are not an exception either. Accordingly, payment service providers are also making significant efforts to direct customers towards the more efficient digital administration and an increasingly active use of electronic payment methods. At the same time, this development creates new opportunities for fraudsters as well: frauds and thefts occurred before as well (pickpocketing, burglary, collecting money in someone's name etc.), but now, with the changes in our way of life these types of frauds have gone to the digital space. It means that realising the advantages of accessing consumers remotely and, for example, that personal meeting is not absolutely necessary

for committing a fraud, changing the previous methods of fraud, criminals increasingly target the digital space. While previously the frauds observed in electronic payments were actually related to payments, as they strived to benefit from a deficiency or weakness of an element of the infrastructure, for example by copying the magnetic strip in the case of the previous generation of payment cards, by now the various forms of psychological manipulation and deception have become dominant.

Current trends show that the majority of frauds are related to consumers' emotional manipulation or deception in a certain way. Of the current patterns of fraud applied, the ones that especially deserve mentioning are the fictitious investments that promise rapid yields, games guaranteeing sure prizes as well as advertisements encouraging the buying of discounted products and services, behind which, of course, there is no intention to deliver at all. Their common element is that the fraudsters contact customers with their offer on an online platform (typically in the social media), or deceive them with the help of – often paid – advertisements placed on those platforms. Another often used method is contacting through unwanted and unexpected written messages (e.g. email, text message), with the aim of acquiring customers' sensitive payment data. They often take the form of notices about sending a parcel or information about the need to change passwords, or a bank announcement about the changed availability of an Internet banking platform, and contain a link that navigates unsuspecting customers to a phishing site. These sites may bear a striking resemblance to the platform of the service provider concerned. In addition, many cases are related to frauds committed on the phone in the name of banks or official institutions (such as authorities). Very frequent of them is when fictitious attacks against a bank account or bank card are simulated. It means that the fraudsters try to make the account holder believe that his/her money is in danger. The common element

Chart 38
Measures planned by the MNB to handle frauds



in these attacks is the pressing tone, putting the victim under pressure, or convincing the customer to download some application that allows remote access with which it is possible to take control over the customer's device (e.g. smartphone). In relation that, the original telephone number is often concealed or replaced (spoofing) so that the call will seem even more real. In these cases the account holder's mobile phone does not show the caller's real phone number, but it shows a number set by the fraudster, for example a bank's central information phone number.

In order to keep the frauds observed in electronic payments at a low level, the MNB worked out a three-element action plan. Taking into account the aforementioned developments, the MNB intends to put special emphasis on increasing consumers' financial awareness as well as on the prevention of frauds observed through electronic payment services. Therefore, a recommendation regarding the MNB's related expectations is being elaborated for payment service providers, and the preparation of the implementation of a Central Fraud Detection System is also in progress.

Initiatives to increase financial awareness

With the acceleration in digital transformation and in particular with finances becoming digital, it is especially important to educate consumers, i.e. to call their attention to the dangers ahead of them, and to show them what to do against these risks. All this is of utmost importance, as from a cyber security aspect many households are not prepared for the changes brought about by the digital transformation. In order to provide support, at end-2022, within the framework of a wide-ranging inter-organisational cooperation, the MNB, the Hungarian Banking Association, the National Media and Infocommunications Authority, the Special Service for National Security – National Cybersecurity Centre as well as the National Police Headquarters decided on a common



KiberPajzs

educational programme called CyberShield (KiberPajzs). The circle of participants has been expanding continuously since then; the Ministry of Justice and the Supervisory Authority for Regulated Activities have also joined the initiative.

The campaign of the CyberShield project uses the examples of everyday people to call attention to dangers, and provides information²⁸ on basic fraud patterns and forms of behaviour to watch out for in order to reduce the likelihood of harm. A very important message is that we should not give out our most sensitive bank identifiers and passwords to anybody, also including the expiry date and security code of the bank card, the password linked to mobile banking application or to Internet banking as well as the confirmation codes received from the bank in a text message. We should always thoroughly read and check the content of written messages (such as text messages or emails) before clicking on the links or attachments therein. We should always make sure where the links actually lead to, and instead of clicking on the link it is recommended to write the known web address (for example of a bank) in the browser or to use the bookmark saved in the browser, and we should also check the small lock that shows the security of the website in the browser line. We should always suspect if we are asked to disclose sensitive payment data or to change passwords, or if someone tries to convince us to download some kind of document or application that we do not want. Last, but not least, don't fall for promising offers.

Chart 39
Information providing elements of the CyberShield campaign



²⁸ More useful information is available on the CyberShield website: <https://kiberpajzs.hu/>

MNB recommendation on the prevention, detection and handling of frauds observed through payment services

An MNB recommendation is being worked out for payment service providers containing the MNB’s expectations related to the detection, prevention and handling of frauds observed through payment services. Stemming from their key position in electronic payments, it is necessary that payment service providers apply transaction monitoring mechanisms and take customer educational measures that are able to prevent and detect, and if possible to avert, frauds to the greatest possible extent. Accordingly, the MNB formulates various crucial expectations for payment service providers, including, inter alia, in connection with the application of real-time transaction monitoring mechanisms, the making of new cash-substitute payment instruments (such as payment cards, mobile or Internet banking applications) available for customers as well as transaction value limits and their limitations related to payment transactions. It is also important that payment service providers should comply with the recommendation without prejudice to the customer experience of electronic payment methods.

Introduction of the Central Fraud Detection System

The introduction of the Central Fraud Detection System may efficiently support payment service providers’ efforts to prevent fraud by providing additional information that cannot be obtained from payment service providers’ own analyses. The MNB, together with GIRO, is working on setting up a Central Fraud Detection System that allows the analysis of all orders to transfer initiated by domestic customers, and may, inter alia, support the early detection and/or efficient identification of fraud patterns with the help of network analysis based on artificial intelligence. On that basis it becomes possible for payment service providers to receive supplementary information in real time even about those risks of a given transaction that they themselves are unable to explore from the data available for them. Also, using this information, payment service providers may be even more capable of complying with their obligation under the SCAR during the formulating of the transaction monitoring mechanisms commensurate with risks.

Based on data mandatorily provided by payers’ payment service providers, the system will allow the conducting

Chart 40
Main elements of the operating model of the Central Fraud Detection System



of a central, complex examination prior to the execution of payment orders, which shows what kinds of risks are presumably carried by a given transaction. Payers' payment service providers will receive immediate feedback on the result of this examination, and based on that they can decide whether they will fulfil the payment orders concerned. The functioning of the central system is supported by provisions of law elaborated in cooperation with the Ministry for Economic Development regarding the handling of sensitive payment data and the related mandatory transfer of data as well as tasks to be performed, which is necessary to ensure an adequately specified, closed and secure process.

4.3 IMPROVEMENTS RELATED TO INSTANT PAYMENT IN EUROPE AND IN HUNGARY

Following the model that has already been working in Hungary since 2020, the European Commission intends to introduce regulations to make it mandatory for payment service providers to provide instant payment service.

In Hungary, the instant payment system, which – unlike in other countries – had to be mandatorily joined by all payment service providers, was launched on 2 March 2020, and the operation of the platform has been stable since then. As a result, the vast majority of retail payments, i.e. individual electronic credit transfers initiated below HUF 10 million, are settled in 5 seconds. In view of the regulation, nearly one third of domestic transactions were taken to the new platform, and the number of transactions there is growing steadily. The instant payment systems on the territory of the European Union were typically introduced earlier than the Hungarian system, but the share of instant credit transfers within all transfers is far below the Hungarian figure. Therefore, the European Commission is planning the adoption of a new regulation similar to the Hungarian one. Accordingly, those payment service providers that provide SEPA transfers should also provide euro-based instant payment services as well for all bank customers as a basic service. When justifying the regulation, the European Commission communicated the argument already explained by the MNB before: as the payments market is a network market, in which sending and receiving parties alike have to participate for the successful operation of the system, full coverage must be and is possible to be achieved through mandatory service provision.

A major common objective of the European and Hungarian regulations is that payment service providers should not

provide instant credit transfers as a premium service at a higher price. The European Commission set forth various criteria as well, according to which, if the proposal is accepted, payment service providers may not ask for a higher amount for instant credit transfers than for the already existing ('traditional') credit transfer services. However, in order to encourage everyday, frequent use, the application of previous, transaction-based fees is not necessarily sufficient, as in parallel with payments by card or cash perceived as free of charge, customers are reluctant to pay a fee upon each payment. Solutions to that may be the package-priced account packages, which are widespread in a number of European countries. At the same time, as a response to the aforementioned problem, for the future targeted increasing of the services based on the instant infrastructure, with the amendment to the Payment Services Act the Hungarian regulator set forth that in the case of instant payments initiated with common data entry solutions (QR code, NFC, deeplink) and requests to pay, payment service providers may not charge any fee to consumers as of January 2023. At the same time, payment service providers also do not have an obligation to pay financial transaction levy on these transactions.

While the European regulation determines a schedule for the complete access to the instant payment basic service, the MNB's regulatory amendments already determine requirements in connection with the development of ancillary services. The European Commission also elaborated a schedule for the introduction of instant payments by payment service providers within and outside the euro area. According to the current, not yet final plans, within the euro area the members would have one year to develop and put into service the capacities to send and receive, whereas members outside the euro area could even have three years for that. Obviously, following the adoption of the proposal the euro area would still need quite a lot of time to create the basic functions that have already been working for more than three years in Hungary. It is also important that while the European regulatory proposal would only require the provision of the service, in Hungary individual credit transfers below HUF 10 million (then below HUF 20 million as of September 2023) can only be processed as instant payment. In addition, on the MNB's initiative, the second phase of the development of the instant payment system was launched, which makes the capability of reading common data entry solutions (QR code, deeplink, NFC) and the ability to receive requests to pay mandatory for the members, strengthening the use of the instant payment system in everyday life by that as well.

Chart 41
Main elements of the improvement of the instant payment service



Both with its regulatory instruments and coordinative role the MNB supports the introduction of services relying upon instant payment. The MNB issued a decree regulating the introduction of various customer information and notification rules, and in the case of the QR code it requires the placement of an authentication element for the most secure use of this payment solution. In addition, it also increased the value limit of transactions that are mandatory to be performed in the instant payment system from HUF 10 million to HUF 20 million, with entry into effect as of 1 September 2023. In addition to the regulatory expectations, in 2023 the MNB will also publish its single brand book related to instant payment as well as the user guide of the former. The brand book will precisely regulate the visualisation of the various data entry solutions as well as different rules of providing information to customers in cases when the merchant provides acceptance service based on instant payment. Beyond that, the MNB determines the co-branding rules, and limits the possibility of advertising instant payment as a brand in the case of various platforms.

Chart 42
Planned logos of the instant payment service for various initiation solutions



4.4 POSSIBLE EFFECTS OF THE INTRODUCTION OF THE E-RECEIPT ON THE DEVELOPMENT OF PAYMENTS

The spreading of e-receipts may also support the upswing in the use of electronic payment methods. The National Tax and Customs Administration (NTCA) published its remarkably forward-looking concept regarding electronic receipts (e-receipts), suggesting that e-receipts will gradually prevail in the coming years as opposed to the currently used paper receipts, and as of 2028 only cash registers capable of issuing e-receipts could be put into operation. An important element of the innovative concept is that consumers would remain unidentifiable for merchants, protecting personal data by this as well, and the e-receipts produced during purchases would be uploaded into a central database, from which they could be downloaded by the buyer at any time. Downloading the receipts allows consumers not only to analyse their previous purchases, but, for example, it will not be necessary to keep the paper receipt for years for enforcing the guarantee.

The application of e-receipts may have a major impact on the use of electronic payment solutions as well. According to the plans, the generation of e-receipts will require the transfer of an encrypted consumer key to the cash register, which can, for example, be done by generating a QR code on the consumer's mobile phone, which is read by the cashier. All this is essential because it would be expedient to formulate the process without harming the customer experience, i.e. including an additional step in the whole process should not be necessary in the case of electronic payments. In this respect it is also important to emphasise that the introduction of the e-receipt may open new service provision opportunities for payment service providers as well if consumers can read the e-receipts in their mobile payment applications as well, to which they have already got used to.

4.5 CHANGES IN THE MNB'S EXPECTATIONS REGARDING THE HOLDING OF BANK HOLIDAYS

It is important that it should always be clear for consumers when they cannot have access to certain payment services. More and more consumers use digital financial services regularly, and therefore disruptions in the availability of these services (e.g. mobile or Internet banking) may

cause problems in arranging everyday matters as well, and may also hinder the penetration of such services. In view of the above, on 5 October 2021 the MNB published an executive circular in relation to the amended provisions concerning the holding of bank holidays as set forth in the Act on Credit Institutions²⁹ (Credit Institutions Act), and in particular in connection with the interpretation of the concept of working day. As starting from 2023, in view of an amendment to the Act on Certain Payment Service Providers the same bank holiday rules have applied to non-credit institution payment service providers as well, it has become necessary to review the MNB circular.

In the new circular the MNB clarified the difference between bank holidays and incidents. Within the framework of the review the MNB considered it justified to clarify in an executive circular as well the questions that had arisen in connection with the concept, circumstances and time span of bank holiday, with special regard to determining the difference between planned downtime qualifying as bank holiday and incidents. Namely, the MNB considers it essential that in cases warranting immediate action, such as security incidents or cyber attacks, institutions should be able to prevent the harmful consequences of such events or to rectify them if they have already occurred as soon as possible. However, for a uniform application and interpretation of the law as well as in order to facilitate compliance with the law, it is indispensable that these service outages should qualify as incidents only in a narrow scope and if justified. Therefore, when an incident takes place, the MNB expects detailed explanation from the institutions concerned by the executive circular.

The MNB's new circular regarding the holding of bank holidays also clarifies the expectations concerning the provision of information to customers. In order to protect consumers' interests, the Credit Institutions Act prescribes information provision and reporting obligation both for holding a bank holiday and for the case when an incident takes place, and the MNB also provided guidance to payment service providers in the executive circular on the details of the regulatory expectations regarding these obligations. In addition to determining the deadlines for the provision of information, the MNB considers it a good practice if payment service providers call their customers' attention to the planned bank holiday through an electronic channel that allows direct availability, especially in the form of a push or text message. In the executive circular the MNB also emphasises that institutions should schedule

²⁹ Act CCXXXVII of 2013 on Credit Institutions and Financial Enterprises

the planned downtime to be held outside working hours or at a time when it hinders the provision of the service to customers the least.

4.6 CHANGE IN THE RULES CONCERNING THE BASIC ACCOUNT

The change in the domestic regulatory background concerning the basic account may make this account package scheme an attractive offer for many consumers.

Pursuant to the European regulation on the basic account, Member States may determine the fees related to the basic account at their own discretion. Accordingly, in some countries this account package is available completely free of charge, while in other countries, including Hungary, a certain fee has to be paid for it. With the current fees in place, only a negligible number of consumers have used the basic account, as market-based schemes with better prices have also been available. As of 1 July 2023, however, the maximum of the monthly fee of the basic amount will change from the current 1.5 per cent to 0.5 per cent of the lowest-amount monthly gross minimum wage valid on the last day of the year prior to its due date (i.e. in 2023, it declines to maximum HUF 1000 from the HUF 3000 charged pursuant to the previous rules), and thus more customers are expected to have recourse to this account scheme than before.

Banking costs of 4 million customers may be lowered as a result of the reduction of the fee of the basic account.

In the case of the current fee of the basic account, 15 per cent of customers could have saved costs by switching to it, whereas with the reduced fee 60 per cent of customers will have the opportunity to do so. Accordingly, compared to the previous situation, switching to the basic account may result in savings for an additional 3 million bank customers. The basic account is a good option in any case for the 1.4 million customers who do not receive more than the minimum wage to their respective accounts, as they are typically ineligible for banks' preferential account packages.

With the reduction of the fee of the basic account and the change in the pricing rules of credit transfers, a wide range of free electronic transactions is already available for all customers. As of mid-2023, with the use of the basic account, for HUF 1,000 a month, without any limitation and separate transaction fees theoretically all customers may pay and make transfers by card. As for the latter, the rule applies to transactions initiated with innovative payment solutions (such as request to pay, QR code). Accordingly, there are no additional charges in the cases of shopping in retail outlets or online, bill payments and sending money between persons either. This may significantly support

an even wider use of these services. In addition to the fee reduction of the basic account, it could be justified to introduce a completely free social basic account available for a certain category of customers.

4.7 REGULATORY DEVELOPMENTS AFFECTING INFRASTRUCTURES

Pursuant to the CSDR, with the involvement of the European Securities and Markets Authority (ESMA) and national competent authorities, the European Commission worked on the review of the CSDR during 2022 as well, which has been in effect since July 2014, which continues in 2023 as well. The main areas where the European Commission proposed amendments to the CSDR were identified in the report closing the review. As a result of the review and the report, on 16 March 2022 the European Commission made a proposal to amend the CSDR. The proposed amendments to the CSDR mostly mean the following: passporting would become simpler in the case of cross-border services as the current authorisation process would be replaced by notification obligation; mandatory supervisory colleges would be set up to facilitate a more efficient supervisory work; the provisions related to the provision of banking-type ancillary services will also change to encourage the provision of banking-type ancillary services; amendment to the rules concerning settlement discipline, including, inter alia, making the current provisions clearer (with particular regard to Articles 6–7 of the CSDR); and the rules concerning central securities depositories in third countries would be amended, and thus grandfather rights would cease to exist in their case.

The review of EMIR, the most important regulatory framework of European central counterparties, started in 2022. Connected to other EU policies and ongoing initiatives, the amendment proposals target the development of the capital markets union, the strengthening of the Union's open strategic autonomy and the increasing of the efficiency and effectiveness of EU-level supervision. Secure and competitive clearing in the EU is essential for the development of the capital markets union, and therefore the proposed changes to legislation, including, inter alia, the further strengthening of the supervisory framework, would contribute to the creation of a more efficient and more secure post-trading environment. The strong central clearing system reduces the risks stemming from the excessive reliance on third-country central counterparties and their supervisory authorities. The recent developments in energy markets also highlighted that additional amendments to EMIR are needed for a further reduction of the risks jeopardising the financial stability of the EU.

The Regulation on a pilot regime for market infrastructures based on distributed ledger technology (DLT), the so-called DLTR,³⁰ was published in the Official Journal of the European Union on 2 June 2022, allowing the application of distributed ledger technology solutions in a centralised system. Prior to the entry into force of the DLTR, in 2021, ESMA surveyed³¹ to what extent central securities depositories apply FinTech solutions. ESMA found that the solutions applied can rather be detected in practical operation and the automation that facilitates technical processes. The Union's financial services legislation cannot be applied or are difficult to apply to DLT and crypto-assets as they contain provisions that may exclude or limit the use of DLT, for example in the issuance, trading, settlement and recording of instruments using DLT technology that qualify as financial instruments. A solution to that is provided by the DLTR, which – following an authorisation process – allows the temporary exemption of market infrastructures using DLT from certain requirements of the Union's financial services legislation (such as the MiFIR³²/MiFID II³³ and the CSDR³⁴). Obtaining the authorisation under the DLTR is optional, a possibility for multilateral trading venues, investment firms, market operators and central securities depositories that intend to introduce the technology. Although the DLT Regulation is already effective, there is not yet any central securities depository providing services in a DLT-based securities settlement system as well in practice.

4.8 STRENGTHENING THE IT SECURITY OF FINANCIAL ENTITIES

In view of the increasing risk of cyber attacks, the EU is strengthening the IT security of financial institutions, such as banks, insurance companies and investment firms. The³⁵ Digital Operational Resilience Act (DORA) was finalised as part of the digital finance package consisting of four

proposals³⁶ on 27 December 2022, and has to be applied as of 17 January 2025. The supervisory authorities concerned were asked to elaborate the technical standards.³⁷ The objective of the legislation is that the European financial sector should remain sufficiently resilient and functional even in the case of serious disruptions in operation, and its participants should prepare for the prevention of cyber threats and the mitigation of the impacts of cyber attacks. Achieving this was hindered by the previous situation, as until now many regulations and directives separately discussed the risk requirements of information and communication technologies (hereinafter: ICT), and although these Union acts covered the main categories of financial risk (such as credit risk, market risk, counterparty credit risk and liquidity risk, market conduct risk), at the time of their adoption they were unable to comprehensively handle all the elements of operational resilience. The requirements regarding the operational risk often preferred the traditional quantitative (financial) approach in risk management (namely the determining of the capital requirement to cover ICT risks) instead of setting targeted qualitative requirements in order to increase capabilities. There was little emphasis on the set of requirements concerning the capabilities of protection, detection, isolation, recovery and repair regarding ICT-related security incidents and prescribing the sharing of information and reporting.

The Digital Operational Resilience Act (DORA) consolidates and updates the ICT-related risks of financial entities and their ecosystems. This is the first time when all the provisions dealing with the digital risk of financial services are included in a single package of regulations. Financial entities have to follow the same approach and rules based on the same principles when managing the ICT risk. ICT parties are, for example, the cloud service providers,

³⁰ DLT Regulation: Regulation (EU) 2022/858 of the European Parliament and of the Council of 30 May 2022 on a pilot regime for market infrastructures based on distributed ledger technology, and amending Regulations (EU) No 600/2014 and (EU) No 909/2014 and Directive 2014/65/EU

³¹ The survey focused on what the assessment of the FinTech sector is like at the centralised securities infrastructure systems, how relevant from the aspect of securities infrastructures the technical and technological innovations such as the blockchain, the smart contract, artificial intelligence/machine learning or the use of APIs are in relation to the supporting of either the automation or operative functioning, or basic or ancillary central securities depository activities.

³² MiFIR: Regulation (EU) No 600/2014 of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Regulation (EU) No 648/2012

³³ MiFID II: Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU

³⁴ CSDR: Regulation (EU) No 909/2014 of the European Parliament and of the Council of 23 July 2014 on improving securities settlement in the European Union and on central securities depositories and amending Directives 98/26/EC and 2014/65/EU and Regulation (EU) No 236/2012

³⁵ DORA regulation: Regulation (EU) 2022/2554 of the European Parliament and of the Council of 14 December 2022 on digital operational resilience for the financial sector and amending Regulations (EC) No 1060/2009, (EU) No 648/2012, (EU) No 600/2014, (EU) No 909/2014 and (EU) 2016/1011

³⁶ Parts of the digital finance package: DORA (Digital Operational Resilience Act), a proposal for a regulation on markets in crypto-assets, a proposal for a regulation on a pilot regime for market infrastructures based on distributed ledger technology (DLT) and a proposal for a directive to clarify or amend certain related EU financial services rules.

³⁷ European Banking Authority (EBA), European Securities and Markets Authority (ESMA) and European Insurance and Occupational Pensions Authority (EIOPA)

Chart 43
Pillars of the Digital Operational Resilience Act in a nutshell



software suppliers, system integrators, providers of payment services as well as the companies offering devices and services, for example intrusion testing, related to cyber security and cyber risks. Harmonisation and rationalisation across the various financial sectors contribute to the increasing of the trust in the financial system and the maintaining of its stability, especially in the time of the general use of ICT systems, platforms and infrastructures, which carries an increased digital risk in itself as well. Of course, not all the elements of the legislation on digital operational resilience are new, as the financial sector has traditionally been one of the most regulated areas in terms of cyber security and cyber resilience.

4.9 SUPPORTING THE PENETRATION OF OPEN BANKING – API ROUNDTABLE

In September 2022, together with the Banking Association, the MNB initiated a roundtable discussion on the operation of open banking and the APIs that allow it, where third-party providers and account providers were also present. So far, open banking under PSD2, has been able to spread only to a limited degree, as the international regulation is

not specific enough in terms of the application programming interfaces (hereinafter: APIs) to be implemented, on the one hand, and banks may hinder new actors in various ways, on the other hand. In the past two years, all the payment inspections of the MNB found deficiencies in connection with open banking. With the involvement of market participants, various areas full of challenges were reviewed during the roundtable discussion, including, for example, provision of information and expected support, testing environments, time for banks to reply, anomalies related to data accessible through API, error identifiers accessible through API and difficulties related to the handling of PSD2 certificates. As a result of the consultation it was established that a major portion of the problems can only be solved by law-making, but until then the supporting of the communication between the actors is crucial. Therefore, the MNB offered that it would collect and publish on the MNB's website the public information about open banking available in Hungary, and would also regularly organise the API roundtable discussion. In addition to encouraging communication, the MNB supports the achievement of the innovation and competition boosting objectives of the PSD2 and the penetration of open banking by an efficient verification of the application of the law.

King Louis I ('the Great')

(5 March 1326, Visegrád – 10 September 1382, Nagyszombat)

King of Hungary (1342–1382) and Poland (1370–1382) from the House of Anjou.

His reign is considered to be one of the golden eras in the history of the Medieval Hungarian Kingdom: peace at home and dynastic relationships abroad facilitated social, economic and cultural development and narrowed the gap between Hungary and Western Europe. Louis' active diplomacy and military campaigns also elevated Hungary to become one of the great European powers. The personal qualities and victorious battles of the 'knight king' inspired even the poets of 19th century Hungarian romanticism.

Louis was the son of Charles I of Hungary and Princess Elizabeth Łokietek of Poland. His versatile education matched his status as crown prince. In addition to law, history and politics, his tutors from the ranks of the clergy also introduced him to theology and the seven liberal arts (grammar, dialectic, rhetoric, arithmetic, geometry, astronomy and music) as well as knightly skills. Following his father's death, he was crowned at Székesfehérvár on 21 July 1342, with uniform approval of the aristocracy.

Louis inherited a healthy state treasury, a stable and seamlessly operating state administration and also enjoyed the backing of talented and loyal aristocrats, who were ready to help the young monarch realise the foreign policy objectives he set out in his pledge made at Nagyvárad. He was deeply religious and a fine example of a knight, and he used an iron hand to govern his empire. He was a devout Christian and a champion of the Church even though the clergy did not always serve the king's interests.

Basically, Louis ruled the land in harmony with the aristocracy; yet, he also tried to win the support of the lesser nobility. His laws codified in 1351 remained in force until 1848 and served as the backbone of the nobility-based constitutional system. One of such laws was the confirmation of the Golden Bull of 1222, which, one and a half centuries after it was issued, had become a fundamental law of noble privileges. Among others, this piece of legislation declared that all nobles enjoyed 'one and the same liberty' (in Latin: 'unus eademque libertas'), thereby granting equal rights to all members of the noble class. Another key piece of legislation was the Law of Entail, which, among other provisions, ruled that if the family line died out completely, the estate reverted to the Crown. (Even though the Golden Bull permitted free inheritance, it never became general practice; thus, the king only documented the status quo.) In the latter years of his reign, King Louis implemented a number of reforms in the state administrative and the judicial systems.

At the request of the pope, Louis often led his army 'to protect the one true faith' against pagan Lithuanians, heretics (the Bogumil) or orthodox Christian South Slavs. His reign was also marked by a number of campaigns to Italy, Dalmatia, Lithuania and the Balkans. These wars took a heavy toll on the country's political, financial and military capacities but the state government stabilised by Louis' father successfully passed all these tests. The Kingdom of Hungary had become a true European great power ('Magyar Archiregnum') during Louis' reign. In addition to his immediate interests, Louis the Great's diplomatic efforts also targeted a number of European states; no Hungarian ruler before or after him had ever practised such an active foreign policy. Spared from domestic struggles and foreign attacks, Louis' reign enabled the country's development both in terms of politics and economics.

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H-1013 BUDAPEST, KRISZTINA KÖRÚT 55.